



A Study of Alveolar Pyorrhœa: Its Associated Lesions and Its Analogies, with a Plea for Radical Treatment.

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PART III.

I have suggested that chronic irritation of the gums sometimes found in pyorrhœa alveolaris, may have as a sequel an interstitial infiltration of an exudate within this tissue; which exudate may finally change into an amyloid.

I called attention also to the fact that the glands of the mucous membrane covering the gums are, though rarely, liable to fatty degeneration. The latter condition is not difficult to diagnose, for upon simple pressure upon the surface small white bodies not unlike the comedones of the skin in form and appearance may be expressed. Microscopic examination of them reveals whether or not they contain fat globules and fatty degenerated epithelial cells. In two cases under my observation both features were clearly outlined.

Amyloid degeneration of the connective tissues of the gum, however, is not so easily proven: partly because of the fact that the condition is a rare one, and because our patients, in private practice or in the dispensary, have no predilection to having slices of gum extirpated. And the iodine test *in loco* is not a certain one.

I was fortunate, however, in recently procuring two cases of true amyloid degeneration. The accompanying photo-micrographs are taken from them. No. 4 shows an amyloid body formed immediately beside a blood vessel transversely cut, and No. 5 shows the same degenerative process invading the intercellular spaces

**Treatment
of
Alveolar Pyorrhœa.**

One of the chief questions arising is, first, whether the systemic mal-condition which primarily left its impress upon the periodontal membrane is one of past record only, or, second, whether it is a matter still to be combated.

Only a *thorough physical examination* can decide this with certainty, and such an examination should be inaugurated in each case presenting itself for treatment. Empiricism should hold no sway when the entire

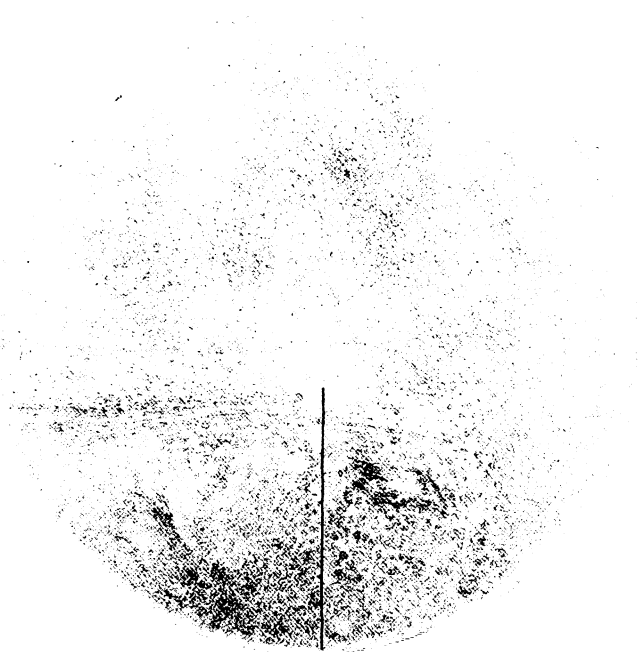


FIG. 4.

denture of the patient and the reputation of the practitioner may be at stake.

Should the first condition prove to be present, simple surgical procedure would suffice to cure the disease. This would mean, first, removal of calcareous deposits from the root; second, removal of necrotic portions of alveolar process and apical cementum, together with irrigation of the pockets with germicidal solution; third, establishing firm support of the loosened tooth or teeth.

In many teeth seriously afflicted by the disease I have upon extraction found the pulps either long dead or in the last stages of congestion.

This phase, therefore, deserves consideration. A long experience has led me to believe in the efficacy of removing pulps from those teeth with which are associated deep pockets and whose apical portions are laden with calcareous deposits.

In the second class, that in which an adynamic condition is of present record, the above procedure is not sufficient. Here the concretions are not the sole factor to be dealt with.

Stomatitis of syphilis indicates complementary constitutional treatment; no dermatologist would neglect systemic treatment in the lichen of

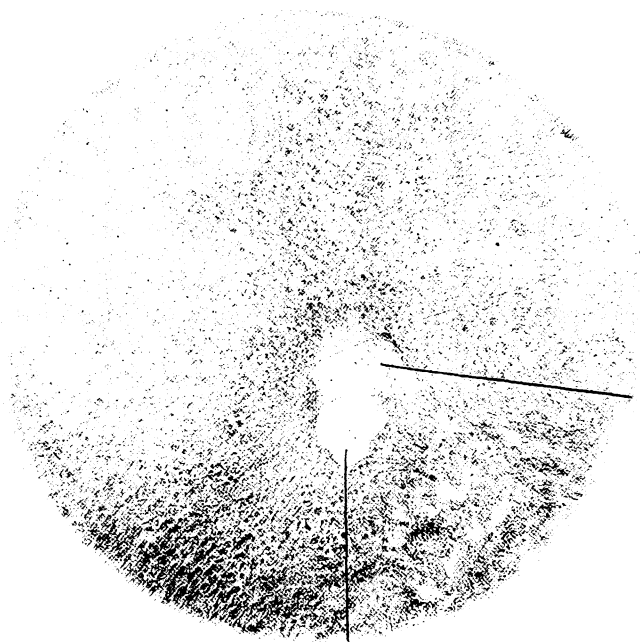


FIG. 5.

scrofula, and the local manifestations of gout cry aloud for general medication.

So every case of pyorrhoea alveolaris associated with a constitution from which the marasmic fog has not yet been lifted calls for internal medication, for institution of hygienic measures; demands that trinity of restoratives, nutriment, assimilation and elimination.

Hygienic laws are too well understood to necessitate further elaboration of them here. The lamentable fact is that they are not generally obeyed. Too much stress cannot be laid on serving proper nutriment be-

fitting divers cases and encouragement of its assimilation. If need be, the field of internal medicine should be brought into requisition to aid us.

How to best eliminate? By bringing into tonic activity the excretory glands of the entire system. By irrigation. Let the patient drink pure water. In the words of the countess in "The Beggar Student"—"the best of water," in large free potations. Let him quaff it during busy hours of the day, when "good night" is said, and again when he greets the morrow. In gastric and intestinal fermentation, which means also auto-intoxication, let him, morning and evening, add to each liter of water, a half teaspoonful of table salt. (Koppe, Gryus, Illberg,* Hallervorden.)

I cannot mention the subject of elimination by irrigation without commending the practice of high colonic flushing, a practice, recently again elaborated by Dr. Elmer Lee, which has rescued from death many patients suffering from infectious disease, and from a living death many who were subject to auto-intoxication.

Every practitioner should then at once direct his patients into true hygienic channels and institute, or have instituted, a course of adjuvant internal medication as a part of the treatment to be begun.

**Requirements
of Local
Treatment.**

If there exists a calcareous deposit its removal is indicated. Whoever has attempted to chisel away the hard, greenish deposit from roots of extracted teeth so encrusted, will ever after view with doubt the statements of some of his *confreres*, to wit: that by "superior deftness" they "remove every particle" of tartar.

While the soft, chalky, cream-colored deposit readily yields to chisel and scraper, I have found the great tenacity and hardness of the variety first mentioned, to yield only when great force and patience were exerted upon it, even though it lay upon a table before me.

There are, however, at least thirty per cent. of teeth affected by alveolar pyorrhoea which are not at all encrusted, or which at most show but a slight deposit near the gingival margin. I do not refer to those cases due to senile atrophy, nor to the incipient stages of pyorrhoea alveolaris. Indeed, I have studied these cases, especially their latter stages, when pus flows most profusely, and the alveolar walls are much broken down. The apices of these teeth are usually sharp and rough, showing resorption. The roots upon being split, will, by their discoloration, show an infection invading the dentine from the periphery. This itself would account for the chronic irritation, granule formation, and death of the pulps, occurring so frequently. Out of twenty extracted teeth of this character

* Illberg has recently recorded some interesting cases of nervous disturbances due to auto-intoxication relieved by this means.

examined, six of them had dead pulps, the chambers containing huge granules. Five others contained pulps still alive, but granular.

It ought to be evident that the mere cleaning of these roots, however deftly done and the application of styptic washes will not, cannot effect a *cure*. My practice with this class of teeth I can best elucidate, by reporting two cases as examples.

**Replantation
of Pyorrhœal
Teeth.**

Mr. N., of marked neuropathic disposition, exhibited both upper central incisors very loose, bathed in pus and thrown out of line about forty degrees. The lateral incisors slightly affected, but still firm. The central teeth were extracted. The pulps had been dead and slightly decomposed, and the apical portion of the roots necrosed. The tartar was removed with difficulty, the canals cleansed and filled with gutta percha and the apices polished with diamond disks.

The sockets were next freed of necrotic bone, deepened and shaped with large, long shanked burs so that the teeth might be set in line with their neighbors.

These having been placed, gold bands which had been previously made for each of the four incisors were adjusted and a plaster impression of their lingual aspect taken. This removed, the bands were placed in their places upon it and there soldered, thus forming a series of four connected links. When cemented upon the teeth they formed a support unequalled by silk or wire ligature. It is needless to note that strict antiseptic methods were observed from beginning to end. The sockets were irrigated with a one and a half per cent. pyrozone solution and the teeth themselves were kept immersed in a three per cent. solution whenever practicable. A slight oedema of the lip and gums which appeared the next day rapidly subsided. It is a gratification to note that healing came by first intention, and that when recently I removed the bands, three months after the operation, the teeth were firm and promising future service. The gums had assumed a normal pink color and did not permit a probe to be passed beyond the loose margin.

Cataphoresis in this case was a failure, probably because of the congested condition of the tissues and blood in the socket. This operation is a proper field for the administration of nitrous oxide gas, or of ethyl bromide. I would discourage the use of cocaine injections because of the added danger of subsequent inflammation of the gum tissues.

**Exposure of
Root by Incision
of Gum.**

Another case of less grave condition in which the treatment of alveolar pyorrhœa was greatly simplified, and the cure is one of three years' standing, is the following one, Dr. Cazier being the patient.

It was a lateral incisor with a deep pocket fol-

lowing the labial aspect of the root nearly to its apex. The concrement was chalky, of cream-color and removable with comparative ease.

The gum was incised parallel with the root and to a point beyond the necrotic process of the alveolar wall. This incision was supplemented by one at its upper extremity at right angles with the first. The two flaps were held aside, so as to fully display the diseased tissues. The tar-tar and necrosed bone were removed under antiseptic irrigation, and the inner surface of the gum curetted. Three fine silk stitches completed the operation. The patient was discharged with the usual commendation to the hourly use of antiseptic mouth wash (saturated solution boracic acid). The healing was a matter of hours only, and no further resorption nor pus formation has taken place. Here, as always, I wish to place stress upon thorough removal of all osteomyelitic degeneration and beg to submit that this can be done best by radical exposure of the diseased parts.

The dentist's success in the cure of pyorrhoea will ever depend only upon his ability to grasp the whole condition underlying the disease in each case. Half-way measures that have held sway so long ought to be courageously abolished whenever "alleviation" and not "cure" may be attained. "A cure may not always be attainable." No—neither does the famous surgeon cure every case of appendicitis. But, at least, the failure may not be laid at the door of his sensible radical procedure.

Non-Cohesive Gold: Its Merits and Manipulation.

BY D. J. McMILLEN, M.D., D.D.S.

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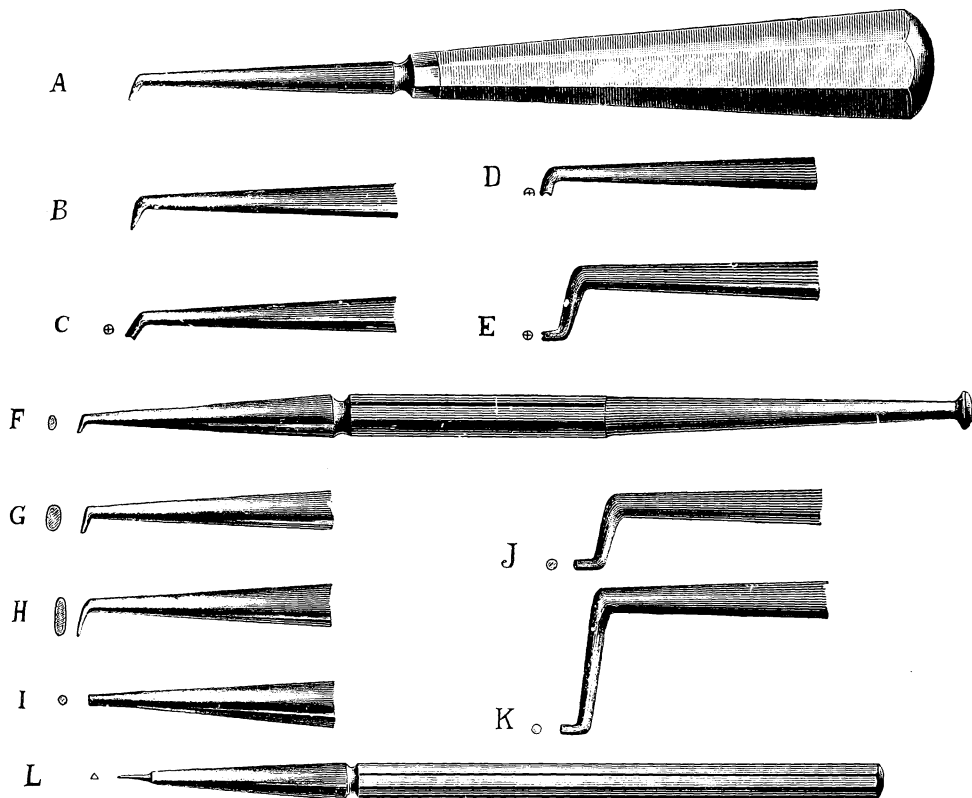
Illustrated by W. J. Brady, D.D.S.

PART II.

Not only are the qualities, preparation and manner of using non-cohesive gold different from the cohesive form, but the instruments also, as well as the manner of using them. Fig. 15 shows the instruments for non-cohesive gold. Of these A to E, inclusive, are hand instruments, to be used when the force exerted is by hand pressure only. The handles are large, to allow a firm grasp of the instrument, and may be of any shape suitable to the operator, so long as they afford a firm grasp and are not too heavy. They are best made of ebony or ivory, though the fastidious operator will delight in pearl handles, with elaborate trimmings. If the

instruments are made entirely of steel they prove too heavy for comfort and that delicacy of touch which should be cultivated by the expert dentist.

A. and B are the large and small wedge instruments, and are simply conical points of different sizes, bent to nearly a right angle, and are universal in their use, for either side, upper or lower. The detail of the uses



INSTRUMENTS FOR NON-COHESIVE GOLD

FIG. 15.

for all these instruments will be given later. C, D, and E are known as riveters, and have cylindrical points, squarely cut off and are lightly serrated. C and D differ only in size and in the angle at which the points are bent. These are for lower teeth, either side. E is for upper teeth, but either C or D may be used for upper teeth also, as may seem most convenient. The serrations should be light, simply to keep the instrument

from slipping when force is exerted. Considerable force must be applied with these instruments, and if not somewhat serrated they slip and do injury to the soft tissues.

F to K, inclusive, are mallet instruments, to be used when the force is largely applied by means of the ordinary condensing mallet. The handles are large enough to permit the necessary malleting without springing, slightly heavier than ordinary pluggers, and of the same length. F, G, and H are foot-pluggers, and have no serrations whatever. They differ in size and width, F being quite small and G being broader and slightly longer. H is long and thin, for use at the cervical margins of deep cavities, or for reaching between teeth from the buccal or lingual sides.

I, J and K are condensing instruments, and are simply conical points with ends cut squarely off, without serrations. I represents a perfectly straight point, J and K the same shaped point with the shank bent in bayonet form, for convenience in reaching lower molars. More points like I, but of different diameters, may be added at the pleasure of the operator. L is the gold roller, whose uses have been described in the previous chapter.

This set of instruments may be increased by the operator, though the number shown is sufficient for all ordinary needs, and the "handy" dentist will be able to do nearly everything with five or six of the set. It should be borne in mind that these instruments are not heavy, clumsy things, but the points are about the size of ordinary points, and permit of the same delicacy of touch which is required to do fine work of any kind. As yet, no such set of instruments have been on the market, every user of non-cohesive gold "picking up" a set to suit his fancy. The author has been solicited many times to place these instruments regularly upon the market, but has neglected the matter from pressure of other business more than any other reason.

Having considered the foil and its preparation into cylinders, the general preparation of cavities and the instruments for non-cohesive gold, we are ready to enter into the details of the actual filling of cavities.

Fig. 16 represents a simple cavity in the grinding surface of a lower first molar, and is a type of its class. This cavity has been prepared as before described; the bottom of floor has been rendered flat by cement or otherwise, and the walls but slightly undercut, all deep undercuts being avoided. The margins of the cavity are but slightly beveled, just sufficient to protect them, but not as much beveled as is ordinarily done in using cohesive gold. A cylinder is selected whose length is about one-fifth more than the depth of the cavity. A shorter cylinder will be condensed so much at the final malleting as to leave the margins not fully

protected, and a longer one is not only a waste of gold, having to be dressed down at the final finishing, but will prove inconvenient in the crowding in of the subsequent cylinders.

**Management of
Non-Cohesive
Cylinders.**

This first cylinder must be small enough so that it may be crowded accurately into the small wedge-shaped end of the cavity, yet be large enough so that it touches both side walls of the cavity when introduced and crowded back in position, remaining firm in its place without support from an instrument, or "assistant plugger,"

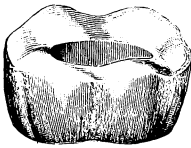


FIG. 16.

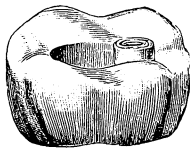


FIG. 17.

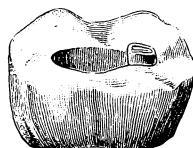


FIG. 18.

while the next cylinder is being picked up and introduced. A great source of failure among beginners in using non-cohesive gold is the choice of cylinders too small in diameter for a given cavity, so that after introduction and crowding to place, the cylinder falls out as soon as not supported by the instrument.

Fig. 17 shows the first cylinder introduced, and Fig. 18 the same after crowding back with the foot-plugger F. The cylinder is flattened laterally with pliers, before introduction, so that it may enter the narrow extension of the cavity, but the crowding back by the foot-plugger spreads it against the sides perfectly. Such is the accuracy of adaptation of this gold that the most minute crevice or scratch even in the walls of

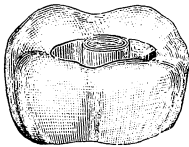


FIG. 19.

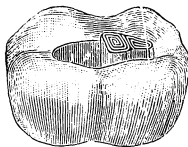


FIG. 20.

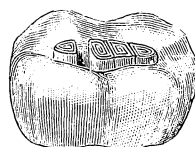


FIG. 21.

the cavity is perfectly filled by the lateral spreading of the cylinders in the process of crowding or wedging them in, if properly done. No adaptation by cohesive gold can possibly equal it. Fig. 19 shows the second cylinder introduced after the manner of the first, and Fig. 20 shows this cylinder crowded back to place. Being larger, it takes the larger foot-plugger G. This crowding back should be thoroughly done, and may be accomplished by steady hand pressure or light blows of the mallet.

It must be remembered always that the cylinders must be of great enough diameter to touch both side walls and remain in position without support when crowded into place, and each cylinder must reach *entirely to the bottom* of the cavity, projecting about one-fifth of its length above the cavity margin. The cavity is filled in this manner till about two thirds full, when a cylinder is introduced and pulled forward against the **anterior wall** of the cavity as shown in Fig 21. The remaining space is filled in by a cylinder or cylinders until entirely full, taking great care that **all cylinders reach entirely to the bottom**.

The cylinders are now ready for "wedging," Fig. 22, using the large wedge B, crowding it down between the cylinders near the center of the cavity, and giving it a lateral motion on all sides. The handle should be so manipulated that the hole is enlarged nearly as much at the bottom as

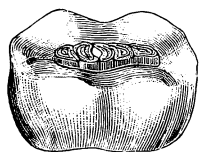


FIG. 22.

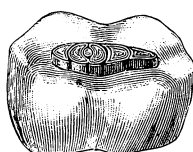


FIG. 23.



FIG. 24.

at the top, and great care taken to see that the opening is made entirely to the bottom. The wedging must not be overdone, however, as it must be borne in mind that a great lateral force is exerted by any wedge, and the tooth can easily be split by careless work. After the opening has been made by the wedge instrument, a "wedge cylinder" of gold is introduced. This is a cylinder rolled quite hard, and may be prepared by further condensing a tight-rolled cylinder between the fingers. This wedge cylinder is firmly grasped between the points of stiff pliers and inserted to the very bottom of the cavity, Fig. 23. Upon the proper insertion of these wedge cylinders depends the final success of the filling. If not pressed firmly to the bottom, they may loosen and come out in time, and the whole filling be lost, as these wedge cylinders are the keys which bind all the others. A wedge cylinder should be large enough to fill the hole made for it, and should, to the experienced hand, go in with a "*screak*." If too large a cylinder be used, it cannot be pushed entirely down to the bottom. Great caution must be observed not to split the tooth, as may be done by the careless operator.

More than one wedge cylinder is usually required, and these are inserted by using the large wedge instrument B as long as it can be crowded down with moderate pressure, then using the small wedge in-

strument A, and inserting one or more smaller wedge cylinders in the same way, always remembering that each wedge instrument and each wedge cylinder must reach entirely to the bottom of the cavity.

**Completing
a Non-Cohesive
Gold Filling.**

The cylinders are now so closely crowded together that no line of demarkation between them can be seen, and the wedge cylinders are ready for "riveting," which is done by pressing them very firmly down by the riveters C, D, or E. After this the filling is ready for the final condensing, which is done by the points C and D, and the condensing points I, J or K, as is most convenient. Mallet blows upon I, J, and K condense the cylinders endwise, and as they condense downward they spread laterally into a compact mass, adapting themselves to cavity walls as no other form of gold does. The diagram shown

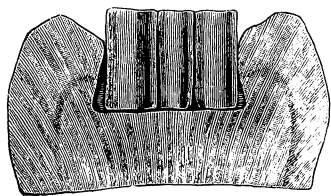


FIG. 25.

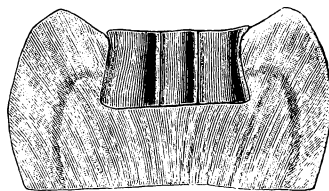


FIG. 26.

in Figs. 23 and 24 illustrate this lateral spreading upon endwise condensation of the cylinders. The filling is finally dressed down with stones, alternating with the burnisher until thoroughly condensed, the final polish being put on with the burnisher. Fig. 25 shows the filling about half condensed. When fully condensed and burnished, non-cohesive gold cannot in any way be distinguished from the most thoroughly condensed cohesive gold, but is superior to it in adaptation, and decidedly simpler in manipulation, permitting much more rapid work.

**The Rubber
Dam Not
Necessary.**

As the property of cohesion is not required in this work, each part of the filling being held in place mechanically, the rubber dam will be seldom required, even for the largest crown or buccal cavity, nothing being needed but a wad of bibulous paper.

It is, of course, always desirable and best to keep the cavity dry, but this is not absolutely essential in all cases, as the author has many times, as an experiment, inserted fillings that were not kept dry, which nevertheless have done excellent service for from fifteen to twenty years, and which were on the grinding surface, where they received the hardest kind of usage. Dispensing with the rubber dam is hailed with delight by all, because of its many disagreeable features, and also because it permits the insertion of gold filling in many labial and buccal cavities, where the pain

and trouble necessarily accompanying the adjustment of the rubber dam often deters both patient and dentist from the use of gold, and a makeshift of cement or amalgam is usually employed. Consideration of the methods employed in other forms of cavities than the one described will follow in another chapter.

(To Be Continued.)

In connection with Dr. McMillen's article, printed in the February issue, it becomes necessary to make the explanation that the original illustrations furnished by Dr. Brady were purposely hidden by some sympathizers of the strikers in our printing office, so that it becomes impossible to make a copy of the text which was intended to accompany the figures. The following explanation of the figures is therefore inserted at this point:

Figures 1, 2, 3 and 4 represent method of folding non-cohesive gold foil into ribbons. Figure 5 shows various widths of the ribbons with the method of rolling the same so as to form cylinders, a full assortment of which in various lengths and thickness are shown at the bottom of the figure. Figures 6 and 7 indicate cavities adapted to non-cohesive gold. Figure 8, a cavity adapted to a combination of cohesive and non-cohesive foils, the dotted line showing that portion filled with non-cohesive foil. Figures 9 and 10, cavities not adapted to the non-cohesive method. Figure 11, a cylinder forced out of place on insertion of the final wedge. Figure 12, cavity properly prepared and made level on the floor. Figure 13, a cavity lacking dovetails at one side and floor not level, consequently this cavity is not correctly prepared. Figure 14, improperly prepared, having too much bevel to the margins, and too much undercut.

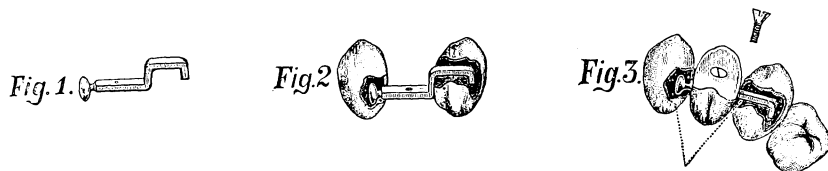
On page 90, paragraph beginning "figure 9 shows cross section of a properly prepared cavity," should read "figure 12," etc.



Removable Porcelain Crown and Bridge Work.

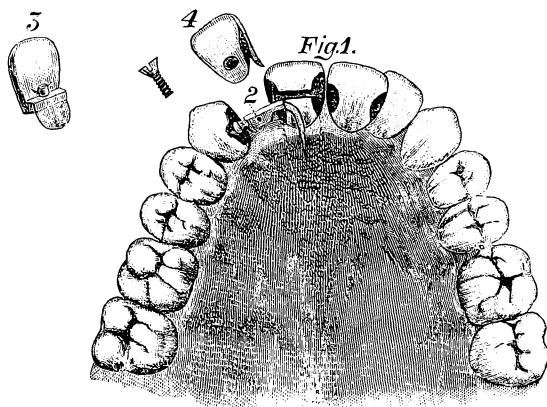
By ADAM FLICKINGER, D.D.S., St. Louis, Mo.

In presenting this system of prosthetic dentistry, the attention of the profession is called to the fact that the cheaper forms of artificial dentures have proven much more of a detriment than a blessing to both practitioner and patient—a lamentable truth to which all observant and thinking dentists are slowly awakening. The introduction, therefore, of any improvement which will elevate the standard of dentistry by securing to



CASE XVI.

the patient a form of denture more compatible with the laws of nature, and to the dentist a more reasonable compensation for his services, should be hailed with delight.

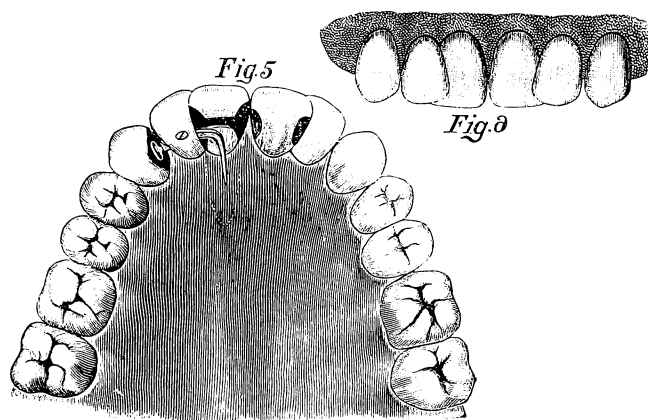


CASE XVII.

The true purpose of the dentist should be directed and his best efforts exercised toward the maintenance of those conditions in the mouth which retain the harmony, symmetry and expression originally given by Dame Nature. If, however, the crown of the natural tooth be beyond restoration, and even if the root, too, must be sacrificed, dental art should

supply a crown, or in the latter case, a tooth which in every respect resembles the lost member.

Unfortunately, modern dentists have adopted many methods of a most unnatural and inartistic character in the construction of crowns, bridge work and other artificial dentures. The use of rubber and celluloid as base plates, upon which teeth are mounted, has been the inauguration of an era. prolific of such evils as science may not be able to eradicate totally for generations to come. The result of this degeneracy from art to mere mechanism has been alike disastrous to practitioner and patient. Hence great efforts are being made to redeem prosthetic dentistry by the adoption of some system or method which shall have a tendency to elevate and perfect it.

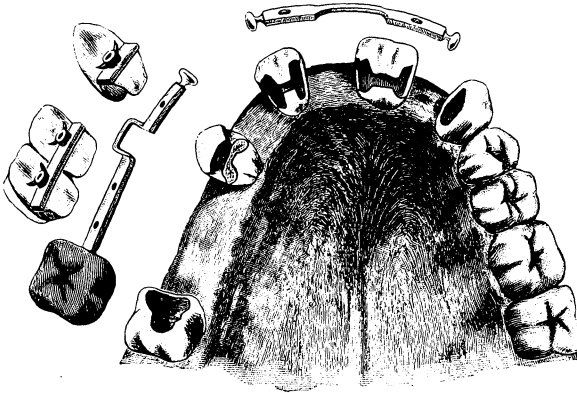


CASE XVII.

In crown and bridge work we have an ideal substitute, provided it is constructed on a usual, substantial and artistic plan avoiding all display of metal, and in such manner that the bridge can be easily removed and readily repaired.

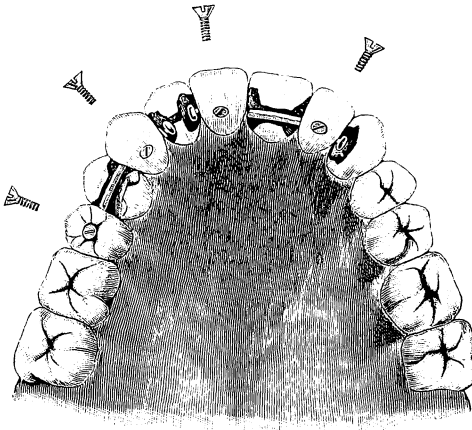
A system of removable porcelain crown and bridge work, on which I have experimented for many years, has given entire satisfaction in all the various phases and numerous cases in which it was practically applied, ranging from the single missing tooth, through an almost endless number of combinations of interrupted dentures. Constructed originally of gold, it is now made of a heavy iridio-platinum saddle, gauge 24, which fits snugly over a heavy bar one-sixteenth of an inch square made of the same metal, on which suitable points are hammered and filed, to enter cavities of natural teeth; or in cases where roots are available, the bar is attached to piers or ferruled posts.

The method of procedure is a simple one. Take for example, the illustrated case designated XVI. The superior first bicuspid is missing. A heavy piece of iridio-platinum wire, gauge 10, is hammered square one-



CASE XVIII.

sixteenth inch thick, forming the bar Fig. 1. After cavities have been prepared in canine, and second bicuspid, as indicated in cut, the ends of the bar are filed and bent to fit the cavities, allowing, however, suffi-



CASE XVIII.

cient space around each projection for the filling material, which may be gold or amalgam. After fitting the bar, an impression is taken with the bar in position, and a die is made from the model, for swedging the saddle, to which the tooth is soldered and baked. The work is com-

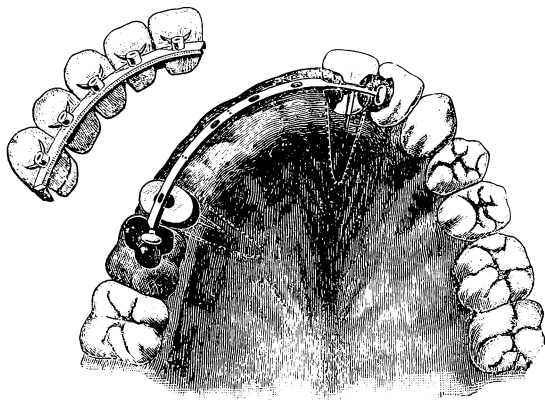
pleted in the mouth by filling around the bar as shown in the cut (case XVI., Fig. II.), to which the saddle carrying the tooth is screwed.

If roots are utilized to carry the bar, they are treated as if for crowning with band, cap, and post; the latter, generally ferruled.

It need hardly be said that in the construction of bridge work, success depends chiefly upon good anchorage, piers and abutments.

The cases selected for this paper and designated XVI., XVII., XVIII. and XIX., and all others that have been previously published are fac-similes of practical cases, which have stood the test of wear for years, and stood them well.

In Case XVI. the superior first bicuspid had been extracted, the second bicuspid was decayed on anterior and posterior sides; being of



CASE XIX.

dense structure, it justified its restoration by filling, thereby avoiding the necessity of crowning. The canine was slightly decayed on the distal surface, and the cavity was utilized for retaining the bar, from which it passed to anterior cavity of bicuspid, then upward, crossing through fissure of bicuspid, to posterior cavity as shown. Fig. I. bar; Fig. II. bar fitted in position; Fig. III. tooth in place.

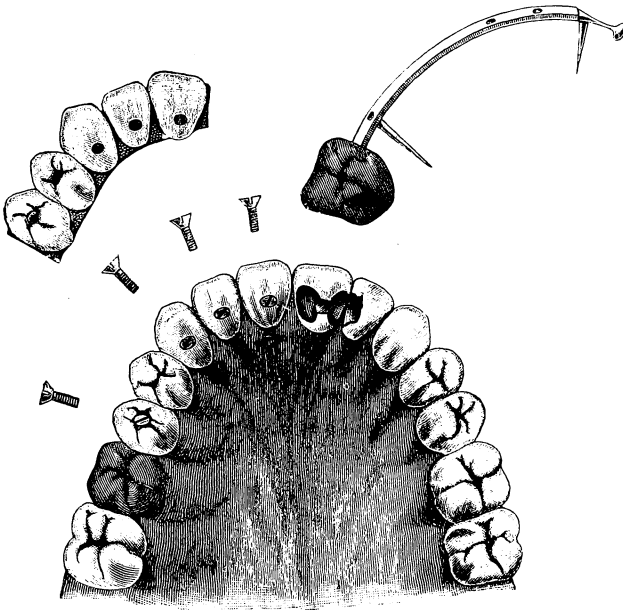
Case XVII., Fig. I.—Shows model of a mouth in which the right lateral is missing; Fig. II., bar in position; Fig. III., tooth soldered to constructed saddle; Fig. IV., tooth after baking; Fig. V., tooth in place; Fig. VI., front view, showing absolutely no metal.

Case XVIII.—Shows models with left lateral, right central, canine, second bicuspid and first molar missing.

The remaining teeth had all been filled (as indicated) years ago, by one of the best operators in the city, and clearly showed that they were in the best possible condition to have the fillings removed in order to anchor the bar of the bridge work in the cavities.

The two cavities in the central, lateral and bicuspid each were united by a groove, after which the constructed bars could be readily and easily filled into place.

Case XIX.—Shows a model with missing central, lateral, canine and



CASE XIX.

first bicuspid; second bicuspid and first molar badly decayed.

Second bicuspid crown was sacrificed, and for the molar a gold shell crown was made, to which the bar for the bridge was soldered. Two piers were attached to the bar, the one to enter the bicuspid root, and the other the pulp cavity and canal central.

Additional support was given to the central by elongating the bridge bar to enter the cavity of the left lateral.

A Time Saving Crowning System.

By J. F. HOVESTADT, D.D.S., Boston, Mass.

To the dental practitioner no material is to be compared in value with time. Any instrument which will save even five minutes is a boon to the busy dentist.

To carefully construct a Richmond crown often takes half of the operator's day, but one of the great faults of the banded crown, is the difficulty of fitting a band that will not irritate the peridental membrane,

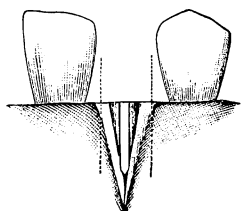
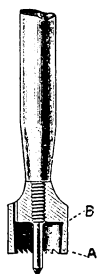


FIG. 1.

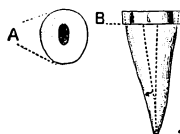


FIG. 2.

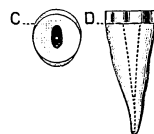


FIG. 3.

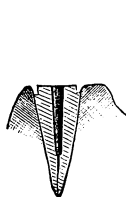


FIG. 4.



FIG. 5.



FIG. 6.



FIG. 7.

the least injury to which, in many cases, causes the formation of giant cells, producing the characteristic red margin, and ultimate loosening of the valuable root. Many efforts have therefore been made to invent an instrument which will overcome these serious difficulties.

About twenty years ago Codman and Shurtleff, of Boston, Mass., put on the market a trephine, after the pattern of one used by surgeons in trephining the skull. The idea was correct, but it was not perfect enough to be advantageous to the dental profession.

Since then various styles have been introduced, all much improved over those first presented. Even in the latest forms, however, there is

difficulty when cutting in crowded places. This has been overcome in the new form of trephine here presented. (Fig. 1).

Figure 2 shows the trephine and its construction. The interior line, from A to B, shows the increasing diameter, which allows for clearance and friction, but as the outside edge is perfectly straight, it will work satisfactorily in a case such as illustrated in same figure.

Figure 3 shows the adaptation of cap to root and by comparison with



FIG. 8.



FIG. 9.



FIG. 10.



FIG. 11.

figure 2 the great advantage of trephine is seen. Operators and patients know what it means to have gold bands tried on the root again and again, until they fit satisfactorily.

By my system I save time and pain by using seamless gold or platinum caps. Those caps are made in exactly the same sizes as the trephines, and after using, for instance, No. 3 trephine, I take a No. 3 cap, which will fit the trephined root perfectly.

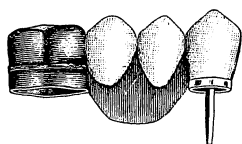


FIG. 12.

Figure 4 shows a root prepared to receive seamless cap. Place on the root a seamless cap, and push the pin through the center, then remove the cap and pin and solder same and then replace it. Take and plaster impression and bite. Procure articulated models and grind tooth to fit; back the same, place it in position, as in figure 5; imbed and solder. Figures 6 and 7 show crown finished.

With this system we can use a Logan crown, figure 8, or the Davis crown, figure 9. Furthermore it can be used for porcelain work, figure 10 showing a rubber tooth connected to platinum seamless cap and pin, before baking, and figure 11 after baking.

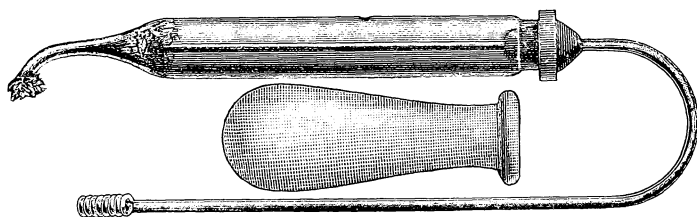
Figure 12 shows a porcelain bridge in connection with which a seamless platinum cap and crown have been used.

In order to prevent the gums from closing over the trephined root, and while making a crown, I protect the root with a seamless aluminum cap so that there is no bleeding nor trouble from the gums when cementing crown.

Hints on Cataphoresis.

By DR. D. B. McHENRY, Aberdeen, Miss.

Take a piece of insulated copper wire, No. 18 or 20, remove insulation from each end, take one end of the wire, wrap around the small end of an excavator a sufficient number of times to form a cone, and into this insert the plug of positive pole. Select suitable clamp for the adjoining tooth. Around this clamp wrap the insulated portion of the wire, place in position, and bend the free end of the wire so that it will enter the cavity and act as the electrode. This removes the necessity of holding the mouth electrode with the hand, and is less liable to break the contact.



To insulate a filling in adjoining tooth from the action of the current, slip a piece of mica down between the teeth.

To prevent leakage at the gum margin, warm gutta percha and crowd it down between the necks of the teeth.

An ever-ready mode of applying the obtundent is to make the electrode out of a long glass drop tube. Remove the rubber nipple, insert into the small end a cotton wick, and into the long end fix a rubber cork. Through the cork insert a wire full length of the tube. Into the tube place the obtundent. The end of the wick will be found always moist, and no overflow. To prevent evaporation when not in use cover small end of the tube with rubber nipple.

Shall Dentists Be Employed in the Army?

BY OTTO ARNOLD, D.D.S.

At a recent meeting of the Ohio State Dental Society a resolution was adopted advocating the employment of dentists in the United States Army.

This resolution refers briefly to the necessity for dental services among the enlisted men, recommending that Congress should adopt such measures as will provide this special service; also recommending that every dental society in the land should adopt a like course in furthering the interests of humanity. The resolution also provided for the appointment of a committee of one, empowered to represent the Ohio State Dental Society in this matter.

**Physical
Condition of
Soldiers.**

This government expects its soldiers, at all times, to render prompt and efficient service, and demands primarily that the recruit be physically sound. It has established a standard, and in order to prevent others than those possessing this standard from be-

ing accepted, subjects each applicant to a medical examination which determines his fitness or unfitness to serve in the army of his country. Furthermore, not content with this preliminary examination, the government attempts to maintain this standard, and environs the soldiers with comfortable and sanitary quarters, furnishes sufficient and wholesome food, exacts exercise and personal cleanliness—in short throws about him every safeguard known to science for the perpetuation of his physical welfare.

Furthermore, should he be stricken by disease, or disabled from any cause, he is cared for in scientifically equipped hospitals and attended by skillful surgeons. Thus every need seems to be provided for. Is this absolutely true? How about his dental organs? Surely the soldier is human; therefore his teeth are an important part of his organism, and if they become diseased or are extracted, his whole body suffers more or less as a consequence. It seems strange that our nation should not before this have included in its medical service the treatment of teeth.

Granted that the entrance examination is thorough and includes in its requirements the possession of a sound set of teeth, there still remains a susceptibility to the insidious process of dental caries, which is no respecter of persons and has no limit. Diseases may come and go, but dental caries when once begun, like the brook, "goes on forever." The mere act of passing from civil into military life does not render a man immune

from this evil, and it is well known that those afflicted suffer greatly, and are indeed from this cause often totally disabled for a longer or shorter period from discharging their regular duties.

Therefore it seems only reasonable in view of these facts that some adequate provision should be made to supply this need in supplementing medical science, thereby improving and to that extent completing the medical service of the United States Army.

**Inadequate
Care of the
Soldiers' Teeth.**

Thus far, the only remedial process at the soldiers' command is the extraction of offending teeth—the operation generally being performed by the hospital stewards, men without dental training, from whom it would be unreasonable to expect the necessary knowledge and skill to successfully practice this branch of surgery.

Even if they were expert extractors of teeth, the immediate result of their operations would be the loss of what were intended for useful organs, the certain impairment of masticating facilities, and who can foretell the ultimate effects upon the whole system?

Indifference to the needs of its servants is not in keeping with the generous policy which usually characterizes this nation—therefore, the dentists and medical men of this country, by virtue of their knowledge of existing conditions, should earnestly appeal to every member of Congress to aid in the passage of a law that will supply this glaring insufficiency.

Dentists, as members of the examining boards, would undoubtedly be valuable acquisitions in preventing the admission of men with defective teeth, in this particular alone rendering valuable service.

Furthermore, in cases of gunshot wounds and other injuries about the mouth and face, the dentists' special knowledge of this region, together with his skill in devising and adapting appliances that may be necessary for their treatment, qualify him for managing this class of cases, which the vicissitudes of war render needful.

Altogether considered, the dentist is a necessary factor no less in the army than in civil communities.

Dear reader, will you not personally lend a helping hand in this noble cause? Will you not enlist the services of your own representative in Congress to support an enactment with this end in view?

If this matter is brought to the minds of those who rule the affairs of our nation, we may hope that they will add this branch of healing to their otherwise perfect system for the care of those who are the safeguard of our frontiers and coast lines.



Tumors Resulting from Septic Pulps of Teeth.

By G. LENOX CURTIS, M.D., New York.

Read Before the Second District Society in Brooklyn, December, 1896.

The object of this paper is to illustrate several of the most prevalent tumors of the jaw, evolved by septic material discharged from the decomposing pulps of teeth.

This will be considered from a practical standpoint, and the desire is to inform those interested how to treat and prevent their recurrence.

Experience leads me to believe that the origin of fully ninety percent. of all tumors of the jaw, face and neck, can be traced to diseases of the teeth, and in many cases to the septic pulp. The most common of these tumors is the alveolar abscess, the contents varying from mere gas to thick pus. The treatment has been described so often, that I shall not here repeat it further than to say—remove the cause, and prevent recurrence. This can be done by cleansing the pulp-canal, filling it perfectly, dissecting away the sac, roughening the surface of the bone, and promoting healthy granulation to fill the cavity.

Another treatment is by extracting the tooth; this course, which is so often considered sufficient, does not always effect a cure. Whenever a decomposed pulp exists, a cavity in the jaw will be found at or near the apex of the root. The only exception, I believe, is when the peridental membrane has not been inflated so as to produce an abscess sac, but has immediately succumbed to the septic influence of the pulp, the gas passing through the canals of the bone to some remote part, and there forming the tumor. This may be so gradual that the attention of the patient may not be called to it, except by the soreness and swelling that might result from the primary attack, and is recalled by the patient only when questioned. These cysts may be simple or multiple, and I have seen as many as three in one-half of the upper jaw.

Whenever the pulp of a tooth is found to be devitalized, and is not removed and the canals filled as suggested, it will surely cause trouble; then no time should be lost in preventing infiltration or increase of the area of the disease.

**Tumor in the Nose
Caused by a
Dead Pulp.**

At this time I have under treatment three cysts of extensive proportions, which are traceable directly to this cause. In the first case the swelling appeared in the nose, plugging the left nares, and causing a perceptible enlargement between the internal canthus of the eye and the wing of the nose. Searching for the cause, I found the pulp in the first bicuspid dead and putrescent. This tooth was extracted by the patient's dentist, who claimed that he did not find it abscessed, and the tooth being of good quality, it was cleaned, filled and replanted. The swelling somewhat diminished, but recurred in two years, much increased in size. Examination of the alveolar process showed a normal condition. An opening was made into the tumor under the lip, in line with the wing of the nose, from which exuded a half ounce of thick, greenish mucilaginous fluid. The sac had gradually increased until the substance of the superior maxillary bone had been destroyed from the point where I entered the sac to the nasal process, leaving only the periosteum intact. Even the inferior turbinated bone was destroyed. The walls of the nares offering the least resistance, the tumor gradually followed that direction until the left nares was completely plugged. The sac was curetted, and the cavity treated and healed, care being observed to force back the periosteum so that the normal opening of the nares was restored.

**Extensive Tumors
in the
Upper Jaw.**

The next case was where the pulp in the left central incisor had for many years been dead, presumably from a blow, as there was a slight fracture on the cutting edge. The pulp was reached from the palatal surface of the tooth and fully two drachms of pus flowed from the opening. The pulp canal was opened and permanently filled. An incision was then made through the gums and periosteum from the labial surface, exposing the end of the root of the affected tooth. A deluge of a thick, yellowish fluid flowed into the mouth—in all two ounces. It was found that all the bone extending from the right lateral to the left first bicuspid, to the anterior boundary of the antrum and the nasal process was completely absorbed, leaving only the periosteum intact. There was considerable bulging of the left nares and the roof of the mouth. This almost plugged the left nares; in fact the floor of the nose was considerably elevated,

and the bone under it was completely destroyed. Fully two-thirds of the roots of the central incisors, left lateral, cuspid and first bicuspid teeth penetrated this cavity. The patient never realized any trouble from this tumor, except occasionally for several years a little tenderness on pressure at the side of the nose, until about one month ago, when the face suddenly swelled, the dentist believing this to be the result of an alveolar abscess attached to the root in question. When the sac of the tumor was dissected away, it was found that immediately surrounding the affected tooth there was an independent sac, which was similar to that found in alveolar abscess, and which contained the pus referred to.

The third, which was still more extensive, involved all the alveolar process of the left superior maxillary from the wisdom tooth to the lateral incisor and extended to the malar process. The face was considerably deformed by an enlargement below the malar process about the size of a small hen's egg, which was apparently as firm as bone. Nearly the en-

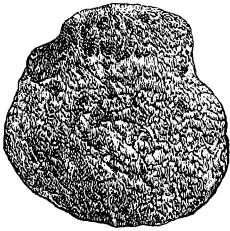


FIG. 1.

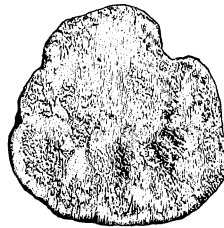


FIG. 2.

tire antrum was found occupied by this tumor, the contents being almost a jelly, of a slightly yellowish color, in quantity about three ounces. The cause of the tumor, I believe, to be referable to the roots of the second molar, which had remained in position many years and were found penetrating the cyst.

These tumors are fortunately not numerous and would be much less so if pulpless teeth were properly treated or promptly extracted. I could cite many cases of adenitis and inflammation of the ducts; also the bursa of the floor of the mouth, osteoma and similar ailments, traceable to septic diseases of the pulp of the teeth, but I believe that it is not necessary to impress upon you further the importance of prompt and thorough removal of any such mischievous influence from the mouth.

**Septic Pulp
Causes an
Osteoma.**

Before my class in the New York Post Graduate Medical School in February, 1893, I operated on a case which illustrated clearly the lack of judgment of a dentist who filled a cavity over a septic pulp. The patient had the inferior left first molar filled with amalgam, from which the pulp had not been re-

moved. On the day following this filling the jaw around the tooth became sore and the face swollen. This condition continued to grow worse for several days. For two or more weeks she suffered much pain, when the swelling gradually diminished, leaving an indurated tumor near the apex of the roots, which continued to increase in firmness and constantly distressed the patient.

At times the pain was quite severe. From the beginning of the trouble the patient was advised by the dentist to have nothing done with the tooth, as it was not at fault, while the physician and others advised its extraction.

Two years later the patient consulted another dentist, who extracted the tooth and found it in the condition as heretofore stated.

This, however, did not check the growth of the tumor, which gradually increased in size until the face was considerably deformed. I was able to enucleate the tumor and here present it. (Fig. 1.) From its size you can readily comprehend that the jawbone was nearly severed, there being not more than a quarter of an inch of the inferior border remaining, so completely had the growth of the tumor destroyed it. You will see that the tumor is osseous, and has been sawed in two to show its structure. (Fig. 2.) The operation was performed within the mouth, thus avoiding the usual scarring, so disfiguring when an opening is made through the face.

This case had been diagnosticated as "sarcoma," and the removal of half of the lower jaw had been advised.

It has been a long and persistent struggle on the part of the dentist to convince the regular practitioners that a knowledge of the teeth and their diseases is requisite to a better understanding of medicine. Apparently, to the medical student, the teeth are of little significance, and their diseased condition is being continually overlooked as of no consequence to the health of the patient. It is as necessary for the dentist to preserve the full complement of the teeth, as it is important for the surgeon to save a diseased member of the body.



Second District Dental Society.

NOVEMBER MEETING.

The November meeting of the Second District Dental Society was attended by a large proportion of the members, and a number of visitors from New York were present, attracted by the essay of the evening, "Tumors Resulting from Septic Pulp of Teeth," which was read by Dr. G. Lenox Curtis, and which is presented in full in this issue. Dr. Curtis was for many years a successful dental practitioner, but subsequently took special post-graduate courses in oral surgery in Philadelphia, and later in Germany, and he now devotes himself to that branch of medical practice. He consequently treats his subject from practical experience in two fields. A most interesting discussion ensued, the chief portion of which follows:

Dr. Shaw.

Where was the inferior dental nerve in this case when you removed the tumor?

Dr. Curtis.

The inferior dental nerve was almost completely atrophied. It was as fine as the finest thread. I cut it off. I received a letter yesterday from the patient, in reply to one from me, asking the privilege of presenting this subject here, together with her photographs. She says that she does not even suffer inconvenience from the wound; also that she forgets that there has ever been any trouble there.

Dr. Babcock.

In the second case reported, when the roots of so many teeth entered the diseased area, I would like to know the present condition of the central, lateral and canine on that side?

Dr. Curtis.

They are normal.

Dr. Babcock.

How can that be with the nerve supply and possibly the blood supply cut off?

Dr. Curtis.

The supply is through the peridental membrane. It is not necessary for blood vessels to enter the pulp directly.

Dr. Babcock. Is that cavity still open? If not, what kind of material has filled it? Is it fibrous or osseous?

Dr. Curtis I believe it will eventually be osseous. It is filling in with granulation, and I think bone will be properly formed.

Dr. Ottolengui. In further reply to the question as to how these teeth remain normal, I would like to say a word. I have seen pictures of teeth showing pulps in the canals, and extending through the foramina, with very beautifully depicted tracings of blood vessels passing out, which exist only in the mind of the man who drew the pictures. We have in the lower jaw a large canal, carrying a large vessel and a large nerve, and it might be rational to believe that parts of this nerve pass up and enter directly into the foramina to supply each pulp; but were that true, I would like to have it explained why there is no analogous canal in the upper jaw, and how the teeth in the upper jaw are supplied? The vessels which pass through the foramina into the pulp are from a plexus in the peridental membrane. We have fractures of the lower jaw which frequently separate the vessels in the inferior dental canal, but we do not hear of the neighboring teeth dying. We have fractures of the upper jaw where a fragment of bone will be separated, carrying with it four or five teeth. The bone can be splinted and the pulps may not die. The death of a pulp in a tooth under such circumstances would be due to traumatic influence, and not to the cutting off of the blood supply.

Dr. Curtis. I have resected the inferior dental nerve, taking it out from the inferior dental canal throughout its entire length. I watched with a great deal of interest its effect upon the teeth. I have not found, in any case, that it made any difference with the teeth. The pulps did not die, there was a numbness of the lip and cheek, but that did not affect the teeth themselves.

Dr. Emerson. I would like to ask Dr. Curtis a question. I have been reading a great deal about cataphoresis. In anaesthetizing a pulp or sensitive dentine, I use a saturated solution of cocaine. The question is, how freely may I use it? May I use it as freely as I wish on the soft tissues without any harm? I use possibly two grains of pure cocaine. Would it be safe to use so much on the soft tissues?

Dr. Curtis. I understood Dr. Emerson to ask what would be the systemic effect. That depends entirely on the susceptibility of the patient. In the majority of cases we would have cocaine poisoning with very serious results. Formerly I saw many such cases in the course of a year, I now scarcely ever

see any serious results. I use saturated solutions of cocaine very freely. In nasal work I am obliged to use it. I use it freely, and often inject it, and rarely have any trouble; but I guard against evil effects at the beginning by giving a stimulant, and by watching the effect not only on the pulse and the breathing, but on the nervous system. I rarely see any trouble from it. I use as stimulants whiskey, digitalis, ammonia and strychnine. I use them prior to the operation.

Dr. Emerson.

Do you use nitro-glycerine?

Dr. Curtis.

No; I do not approve of it, except when I think the patient is dying; then as a last resort I would use it. It has sometimes stimulated the action of the heart, when the patient seemed to be dead.

Dr. Emerson.

What quantity of cocaine would you feel free to inject?

Dr. Curtis.

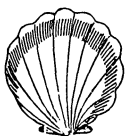
I have often injected a drachm of four and eight per cent. solutions. Of the saturated solution, it would depend on the surface I wished to cover. I would not hesitate to use eight to ten minims.

Dr. Emerson.

I have been very cautious in using it, and would not use it unless I could isolate my tooth. I have weighed out just how much I used, so as to get some idea of the quantity.

Dr. Curtis.

In the restoration of patients we cannot always depend upon the stimulating tonics and agents. We must often resort to other methods. In the last stage, where you feel that death is upon the patient, the rectal injection of champagne is one of the greatest of stimulants and restoratives that is known. I always have it at hand; also a cylinder of oxygen and the rectal speculum. The patient usually responds very quickly to the dilatation of the sphincter ani. Of course, I am situated so that I can have all these things at hand. I have never lost a patient from the effects of an anaesthetic, but the nearest I came to it was from cocaine. We used four minims, and worked a full hour before we felt comfortable, and it was two hours before the patient could go to her home.



Stomatological Club of San Francisco.

Reported by CLYDE PAYNE, D.D.S., San Francisco, Cal.

The Stomatological Club of San Francisco held its regular weekly meeting Tuesday afternoon, January 19. Clinician, Dr. Clyde Payne. Cataphoresis—Excavating sensitive dentine from left inferior 3d molar, demonstrating a method of cataphoresis in conjunction with carbolic acid, cocaine, carbonate of potassium and glycerine. Exhibition of Bridge-work—showing one bridge of three teeth. Richmond crown on the cuspid—gold crown on right first molar and the first bicuspid bridged in. On the left side a bridge of two teeth—a gold crown on the second bicuspid, and as the space was very narrow to bridge in the first bicuspid, the facing was so cut as to lap over the crown, partly covering it from view and having the appearance of a normal bicuspid in this narrow space. Discussion of Dr. Payne's clinic—Cataphoresis.

The question was asked me this afternoon whether cocaine combined with guaiacol would produce anaesthesia. Dr. Forrester, now associated with me, in my presence anaesthetized a very sensitive tooth with pulp exposure. He removed the pulp and filled the tooth at one sitting with no discomfort to the patient. We use a saturated solution of cocaine. There are no after effects that I have been able to observe.

In giving a clinic on cataphoresis my object was to bring out a discussion. Regarding the component parts of the obtundents will say that glycerine is one of the best solvents used. Acids decompose solutions of cocaine. This, together with the obstructions caused by the carious mass probably accounts for the failure of simple cocaine solutions in cataphoresis. The carbonate of potassium neutralizes the acid condition of the carious contents of the cavity. It is possible then for the cocaine to have its full and normal effect upon the nerve filaments. The argument that "the current drives the solution into the tissues" and similar expressions, shows an absolute ignorance of the physiological and chemical changes that take place in a normal and in a diseased tooth, as well as a misunderstanding or lack of understanding of the mechanical and electrolytic action of the current in cataphoresis. The action in cataphoresis is not to drive a solution into the tissues, but the current, by stimulating the circulation promotes and brings about a rapid absorption of the cocaine solution. The electrolytic action

Dr. Clyde Payne
Explains his
Cataphoretic Solutions.

of the galvanic current has in itself, first, a sedative, next, an anesthetizing and lastly a paralyzing effect upon the nerve fillaments. Failure is due to the mechanical obstruction of the contents of the cavity, which act as a stone pavement over the nerve fillaments protecting them from the action of the cocaine, and also to the decomposition of the solution by the acid character of these contents. It is well known that acid decomposes cocaine and renders it inert. To my mind all these drawbacks are rapidly overcome by a solution of carbonate of potassium in glycerine.

I believe the first principle in relieving pain is to dehydrate. I believe the best means of thoroughly drying is by the means of alcohol and hot air. It seems to me that if I used cataphoresis I would object to a coagulent. In cataphoresis we consume a great deal of time in obtunding. It is a question in my mind whether it is the effect of the galvanic current or the medicament. Last week there was some little shock to the patient from the instruments. I believe that Dr. Payne is on the right track. All of us in the Stomatological Club have tried carbonate of potassium and glycerine. I had a case where the tooth was exquisitely sensitive and without applying the rubber dam, I succeeded in relieving the sensitiveness after a few applications. That obtundent is excellent.

I have had no experience with this method and

Dr. Lundberg. I must confess I can give no settled opinion of cataphoresis. Applying electricity to obtund pain, I can remember that years ago electricity was used very frequently by some operators in extracting teeth. I, myself, had an opportunity to experiment with the same process. In those days the essential thing was to paint the gums with laudanum and then turn on the electric current. Many patients jumped out of the chair, they did not know whether the extraction of the teeth or the electricity caused the pain. We abandoned it. As the process is now, in preparing a cavity, it requires a great deal of patience and experience. In time it will, no doubt, show its worth. There are many objections to it. First, the time it takes to obtund a sensitive cavity. Last Tuesday Dr. Payne manipulated the current excellently, but he worked cautiously and seemed, in a great measure, to be successful. Many patients do not like to see wires and strings around the mouth; children especially, have some little hesitancy.

My theory is that it depends largely upon the

Dr. F. C. Payne. patient, the nervous temperament of the patient and the influences of the operator over the patient, more than the influence of the cataphoresis. I think you will agree with me, if you compare the favorable and unfavorable results with the favorable and unfavorable patients.

As you well know, I am a very strong advocate of cataphoresis. When I can make and break the current, and no pain is experienced the tooth is obtunded, I think the theory of imagination is all wrong. I have rarely been successful in incisors. My principal success has been with bicusps. Carbolic acid coagulates the tissues. Guaiacol does not. Guaiacol is not decomposed by electricity, water is. It rarely takes over five minutes to produce anesthesia in the soft tissues. One of the reasons why it takes so long to obtund some teeth is because there is a difference of 500 ohms of resistance in different people. The hands of some are more calloused than others, and in holding the negative pole in their hands it requires a longer time for the current to produce its effect. I have found that patients like to see wires and other accessories which make them feel that you are prepared to work painlessly. The voltage is what hurts. The less voltage and more ampereage, the more effective and the less pain. I have found that the better connection we make with the negative pole the less resistance. I now have my negative pole made of thin lead, and that I place around the neck and pass the rubber dam around the chin. I get a large contact and good effects.

Dr. Lundberg referred to the old method of extracting by electricity. This was about 1857 and the invention of Dr. Francis of Philadelphia. He demonstrated his electrical appliances, and the only effect produced was to call the attention of the patient to another force than the extracting. I doubt if there is any anesthetic effect in electricity itself. We are here for knowledge. Prof. Flagg says that carbonate of potassium and glycerine is the sheet anchor to obtund sensitive dentine. He says this application will produce pain, which can be immediately relieved by washing out with oil of cloves. Why use carbonate of potassium if it is painful? Why not use carbonate of soda to neutralize the acidity? Water and fluids being a good conductor of electricity, why dehydrate the tooth? That is a question which has arisen in my mind and which I have not had opportunity to solve. This obtunding sensitive dentine by cataphoresis is not imaginative. People know when they are hurt. I realize the influence of the mind over the disease. Dr. Tutt, in his work, explains and refers to that influence as a species of hypnotism. I know that I have often been told that a sensitive cavity didn't hurt, while I knew that it did. In the conducting of electricity the longer the line the greater the resistance. As Dr. Strickland says, sometimes the hand is calloused. I never use it. If I cannot use the cheek, I bind it around the wrist. In regard to the shock, it has been said that you cannot apply it without a shock. In the apparatus I use the shock is so infinitesimal that the patient cannot no-

tice it. Changing from one cell to another you cause a slight shock. I believe the medicament is forced through the tubuli and canaliculli.

Dr. Payne. I think that some of the points of Dr. Asay and Dr. Strickland are well taken. It occurred to me, too,

that if we wish to correct the acid condition to use some alkali that would not cause pain. I agree with Dr. Strickland that cataphoresis must not be confounded with hypnotism or power of suggestion. I have used this obtundent with a hot air syringe with excellent results. Better than by cataphoresis. Dr. Strickland has not been successful in anesthetizing cavities in anterior teeth. With this obtundent and hot air, I have been particularly successful in the anterior teeth and less successful in the posterior teeth



ORTHODONTIA

The Correction of Deformities Among Singers and Public Speakers.

BY E. RANDALL JOHNSON, D.D.S., Buffalo, N. Y.

The correction of oral deformities is, no doubt, the branch of dentistry which is to-day making the greatest progress and receiving the most attention. To more carefully note this progress one needs but to compare the crude appliances of a decade ago, with the scientific apparatus of to-day. Formerly regulating was undertaken only for correcting an unsightly condition of the mouth. To-day it is common occurrence

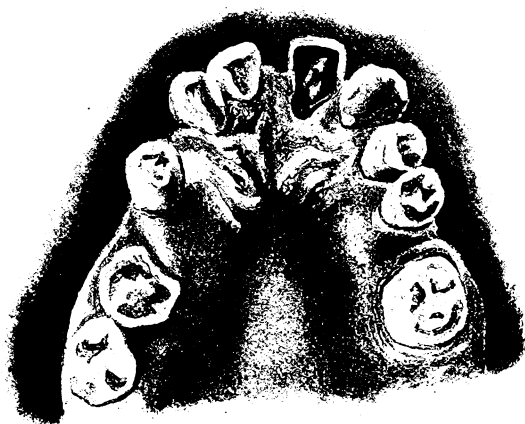


FIG. 1.

for singers and public speakers to have irregularities treated in order to improve the tone and resonance of the voice, as well as to beautify the mouth. It is upon this particular branch of regulating that I wish to dwell, and I will cite cases from my practice as illustrations of the wonderful results which may be obtained.

**A Singer's
Voice Improved
by Regulating.**

In the spring of '95 a young lady called at my office to have a Richmond crown reset upon the root of the left superior lateral; her centrals had been extracted when she was a child, because they were overlapping and in a crowded condition. As a re-

sult, the teeth had moved forward and I found but a small space about one-eighth of an inch between the two laterals. The cuspids had moved forward and inward so that their points were just seven-eighths of an

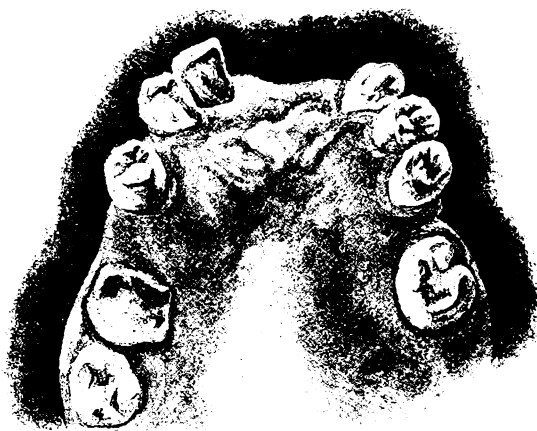


FIG. 2.

inch apart, the general arrangement, or rather disarrangement of the teeth producing a narrow, angular countenance. (Fig. 1.)

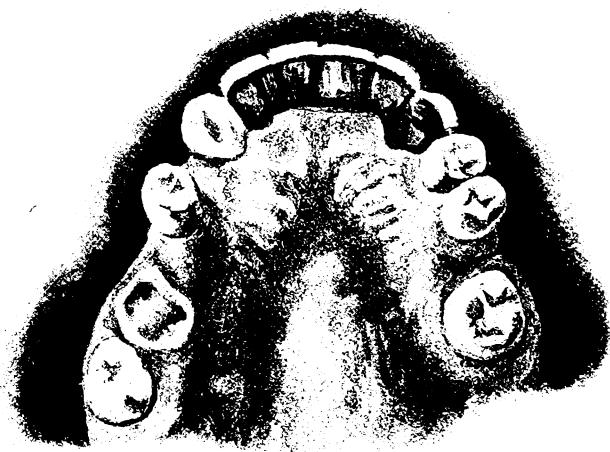


FIG. 3.

The arch was extremely high and narrow, so that the ball of the first finger could not reach the top of the vault. Upon investigation I found

that the patient was a singer of more than ordinary ability, being able to sing high E but with one fault, viz., the tones were thin and shrill, or lacking in color and width.

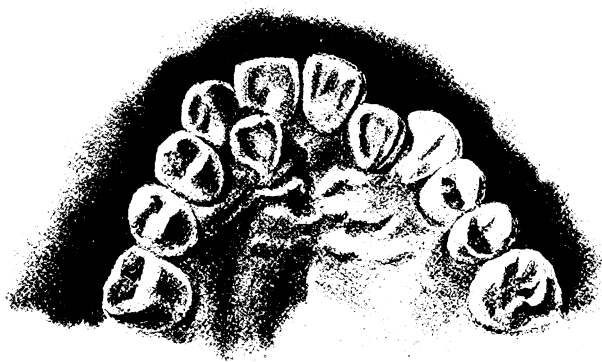


FIG. 4.

After a careful study of the case, the patient was told what could be accomplished, which to her was incredible. After a consultation with her vocal instructor, who assured her that if such a thing were possible the re-



FIG. 5.

sults would be of the greatest benefit to her singing, she undertook the operation.

The first step was to widen the arch, which was accomplished with

a Coffin plate and W. spring. Then the mouth was in condition for the retraction of the teeth, and here I may add a few words in relation to the condition and position of the teeth.

As has been previously stated, the centrals had been extracted, as had also the first right bicuspid and the first molar; the second molar was badly decayed. On the left side the first molar had been removed, excepting one root, and the second molar, which was somewhat decayed, had moved forward, so that the space left was about the width of a bicuspid.

The appliances for moving the teeth consisted of Jackson's cribs on the second molar and bicuspid on right side, and the second molar on the left. A wire tinned and shaped to extend outside of the arch close to the teeth was then soldered to the cribs, and a reinforcement of heavy wire

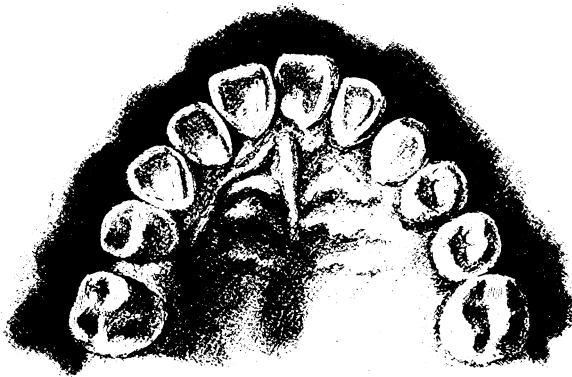


FIG. 13.

was soldered to the inside to keep the arch in its new position. To the wire on the outside was attached small knobs of solder just back of the teeth to be moved. The moving process was then effected with small bands cut from rubber tubing, placed on the teeth, then passed over the wire back of the knobs, and over the teeth again. As the teeth changed position, the knobs were correspondingly moved backward.

After a period of about ten months, the teeth had received the desired arrangement, the arch had been spread at the bicuspid from one and one-half inches in width to one and three-fourths inches. The distance between the points of the cuspids had been increased from seven-eighths of an inch to one and five-eighths inches. The left lateral root had been removed and the mouth was in condition for replacing the lost teeth. (Fig. 2.)

A bridge was constructed as follows: Three-quarter caps were placed on the right lateral and the left cuspid, to which were attached the two centrals and the left lateral. (Fig. 3.) A bridge was afterwards placed extending from the second right bicuspid to the third molar.

The results were eminently satisfactory to both the patient and myself. She is now able to sing high F with good color, and the increase in resonance is very marked. That the expression of the face is vastly improved, need scarcely be mentioned.

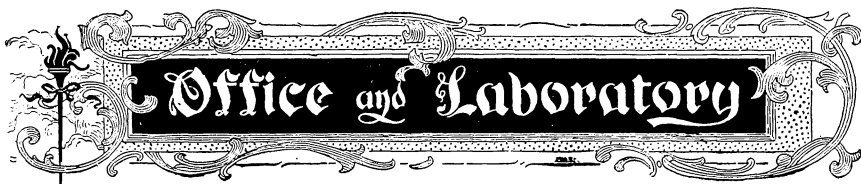
Another case in my practice was that of a school teacher whose superior bicuspids on each side stood in so far as to cause a decided lisp in her enunciation. The teeth were also out of the center of the mouth; the deformity was corrected in the usual manner and the defects in speech were cured.

Still another case, and one in which marked results were attained, was that of an insurance agent. In the eruption of the teeth the right superior lateral had been crowded inside the arch and its place was occupied by the cuspid, whilst on the left side the lateral had been crowded partly inside. (Fig. 4.) As a result the patient had a very one-sided appearance about the mouth, and a conspicuous defect in enunciation.

The correction was effected by removing the second right bicuspid and drawing the first bicuspid and cuspid backwards. The laterals were brought forward and the left bicuspid outward into line. (Fig. 5.) The final results were all that one could wish for, as both the deformity and the defect in speech were remedied. (Fig. 6.)

In my practice among singers and public speakers I have had a large number of similar cases and the results have been uniformly successful. These deformities are being recognized more and more by vocal instructors, for once they have such a case come under their observation they are quick to appreciate the good results which may be effected by dental interference.





Mouth Illumination.

At the February meeting of the Second District Society an electric apparatus was shown attracting considerable interest among those present. The outfit comprises a battery, which is contained in a small neat oak box, and which has the power to run electric lamps of considerable size; several forms of mouth lamps, the novelty of which were the shields made of meerschamum; and lastly, a powerful electric lamp attached to a headgear, on which it works upon a double ball and socket joint, allowing the rays to be thrown in any direction. The accompanying illustration shows this lamp in position, but gives no adequate idea of its practical utility.

All dentists comprehend the necessity of having light in order to properly perform dental operations. During the winter we have many dark days, and many more days upon which the sun sets from one to two hours earlier than in summer, yet in summer, when we have the longest and brightest days, we are apt to have fewer appointments and less necessity for crowding a great deal of work into one day than we do in the winter months, when all of our patients are in town.

If one would compute the number of hours lost in this way, as well as the annoyance to patients of being obliged to come at long intervals, because of the many who have engagements ahead, it will be readily seen that there is some genuine demand for some adequate means of illuminating the oral cavity.

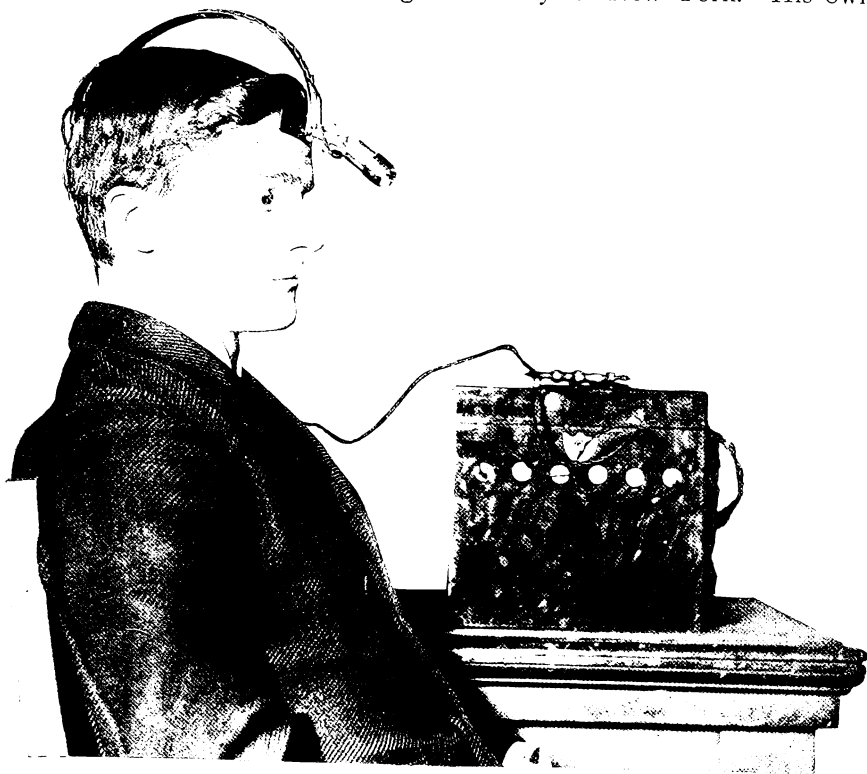
Many devices have been suggested in the past, all of which have failed to become popular. The use of an electric lamp held in the mouth deprives the operator of one hand, and no shield which will protect the tissues from the heat of the light is small enough so that it does not materially interfere with the work; consequently, so-called mouth lamps are useful chiefly for purposes of diagnosis.

The stomatoscope, which supplied sufficient light, was not only very expensive, but the illumination necessarily came from a point opposite to the eyes of the dentist, and consequently strained the optic nerve by causing violent contractions of the pupil, and in many instances the eyes of dentists were seriously if not permanently injured by attempting to work for any length of time with this lamp.

The head light, however, which was shown at this meeting obviates

this difficulty because it is placed above the eyes of the dentist, and he is also, at all times, behind the lamp and consequently in the shadow. Being attached to the head piece by ball and socket joints, it is possible to point the rays of the illumination in any direction.

Dr. M. L. Rhein, of New York, who was present, reported that he has been using a similar electric head light for five years, having first introduced it before the Odontological Society of New York. His own



lamp, however, he procured through a special order, and this may account for the fact that it has not been yet taken up by the profession. But now the lamp, in a much improved form, is on the market and purchasable at a very reasonable figure.

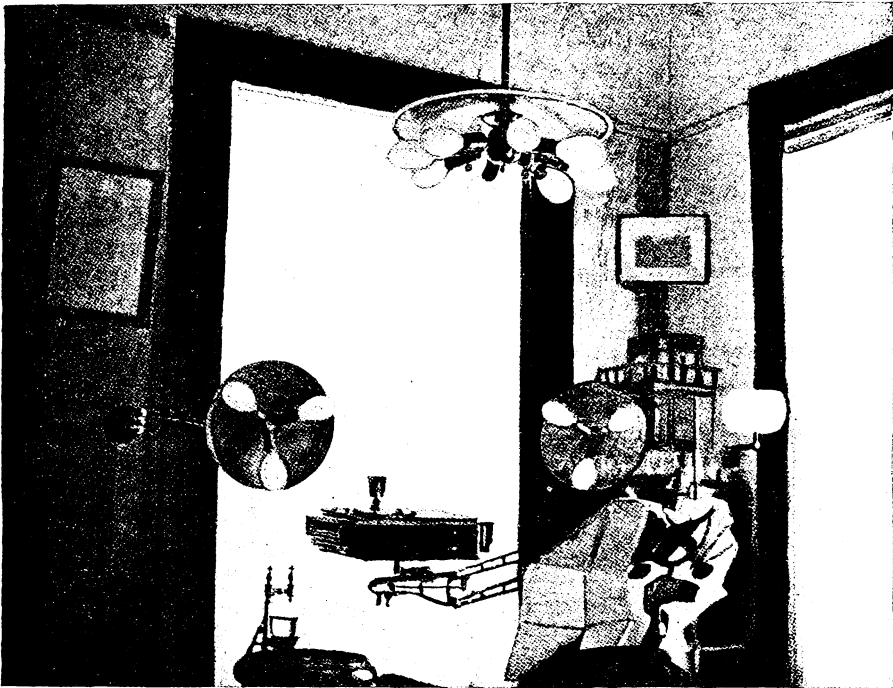
The meerscham shields to the mouth lamps seem to be well designed for their purpose, thoroughly protecting the mouth from the heat of the lamp, and at the same time, because of their color, serving as good reflectors. One of these lamps, of extra size, in a thoroughly darkened room illuminates the frontal sinus or the antrum quite sufficiently for the diagnosis of the presence of pus, should there be any in either cavity. A smaller lamp is invaluable in examining the teeth where there is a doubt as to whether or not the pulp be dead.

Office Illumination.

BY DR. J. ALLEN OSMUN, Newark, N. J.

When in my office some weeks ago, at night, in consultation in regard to a case of irregularity, the editor of *ITEMS OF INTEREST* expressed surprise at the perfection of my system of lighting my office and requested a description of it for publication.

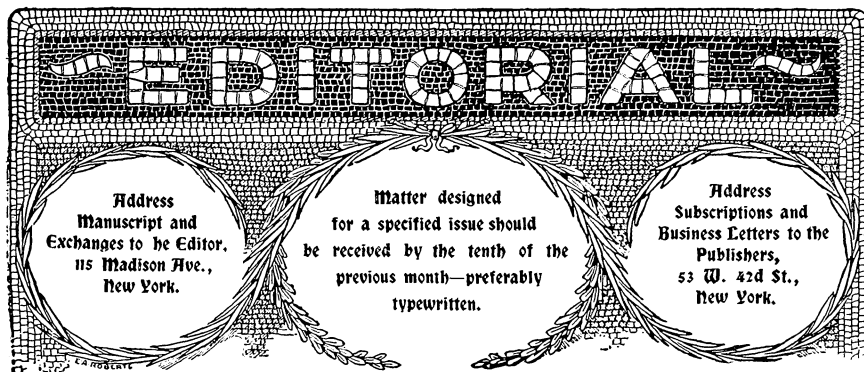
I have tried several methods of illumination for dark days and early twilights, and the one now in use surpasses any.



In the short days of winter and on many stormy days it grows dark very early, and often seriously interferes with an operation, or even compels the cancelling of an engagement, much to the discomfort of both patient and operator. By referring to the accompanying photograph it will be seen that just a little above, and in front of the center of the chair, I have a bunch light of eight electric lamps of ground glass. As the patient is usually thrown back at somewhat of an angle, this gives the light in a great flood, just back of the operator, and illuminates the oval cavi-

ty in the most satisfactory manner. It will also be noted that I have two extension brackets, with three lamps attached to each. When operating in the mouth at certain angles by using these the light may be thrown just where wanted. Moreover, by using all the lamps, overhead and in front, at one time, the light is so blended and equalized that practically no shadows are cast. These brackets, as well as the one over the chair, are provided with glass reflectors, which intensify the light. The lamps are controlled by switches (which can be easily reached) placed at the right of the chair. Each light is on a separate switch, so that one may have light from any or all of the brackets at once. One thing is to be emphasized in connection with the lamps. Get ground glass, as the plain glass gives too glaring a light, while the opalescent globes give a light which is trying to the eyes. There is only one drawback to this scheme; if one is not careful he will be tempted to prolong his hours, as by this arrangement the operator can see as clearly as at noon-day. As to the method of wiring, I think it is best not to go into details. Any competent electrician can explain it, and the dentist if he needs the light at all would not have time to bother about it.





Shall We Ask Congress for a Special Law Regulating Medical and Dental Patents?

Dental ethics and dental patents have been so inextricably mixed, that it is time that some effort should be made to straighten out the snarl. At present there are three distinct sets of opinions as to the righteousness of taking patents. Some men hold that no patents should be asked for by a man claiming to be professional. Others believe that they should not be considered unprofessional, merely because, having invented some useful appliance, they ask for governmental protection. A third-class cares nothing for the professional aspect, but insists upon his legal right to take patents. Curiously enough, there are many and good arguments offered by all three, though it is probable that the second claim is the one which should receive the support of the profession at large, provided that the present laws could be amended, in accordance with suggestions which will be made later. First, let us consider the subject analytically.

Whenever the real professional man asks the advocates of patents, "Why do you take a patent?" the invariable reply is "Why do you take a copyright?" There is both similarity and difference between copyright and patent. They are dissimilar because, whereas the patent protects the invention, in its principle or essence, the copyright guards only the outward form. The holder of a patent may

**Should Professional
Men Take
Copyright?**

say: "That is my idea; you shall make no use of it without compensation to me." The professor of a copyright, conversely, cannot say: "Those are my ideas; you shall not use them without compensation to me." All that he can claim is: "That is my book; you shall not print those ideas, in that identical language, without my permission."

A man may write a work upon "Methods of Filling Teeth," for example. No other person may print the same ideas, in exactly the same language, nor under the same title. But all persons are privileged to write books upon the same subject, teaching identically the same methods, provided the language be different, and the title, "The Filling of Human Teeth," "The Filling of Teeth," "New Methods of Filling Teeth," "Correct Methods of Filling Teeth," or any one of a hundred phrases, expressing the same idea, but utilizing a different sequence of words from those in the protected title.

Text books are the foundation stones of knowledge. Without them, science would die, because the teachers might die without having been able to transmit their knowledge in a concrete form to any one of hundreds of their students; whereas, printed books stand as accurate records for all time. Professional men, as a rule, receive no reward, as a result of the possession of a copyright, which in any manner amply repays them for time devoted to the acquirement of that knowledge which they record in books. Nor is the copyright taken with a hope of reward, though reward should be ungrudgingly granted. The fact is that the production of a book of science is expensive, while the return is often chimerical. Consequently no publisher could be persuaded to undertake the production of a text book which had not been covered by copyright. The publisher not being bound by any rules of dental ethics, and being the sole arbiter of what he will print, it is manifest that the copyright is a compulsory condition to publication. Without copyright there would be no text books: without text books science would perish.

As to whether it should be considered professional or otherwise to take patents is worthy of some consideration. As being in a sense the act of a tradesman, and therefore the antithesis of professional spirit, it has been held, especially in the medical world, to be unprofessional. But in this age of progress, it is time

**Should Professional
Men Take
Patents?**

that musty old doctrines should be revised to meet the modern advance in thought. Sentiment should have less force, and reason should hold sway. This does not mean that ethics should be set aside; but ethics, like all science, for ethics is a part of social science, is or should be subject of discussion, and if need be, of alteration.

In the last century it may have been true that the holding of a patent prevented a professional man from giving that attention to his duties which his patients had a right to exact. But to-day medical science has made great strides, and a tremendous proportion of all human diseases are cured by surgical interference. Surgery is now absolutely dependent upon mechanics, for without instruments, surgery is rendered powerless. Instruments can only be made in perfect form by manufacturers who devote capital to their production. Here then, as with the text book, we find that the foundation stones of surgery, its instruments, depend upon the manufacturer, and no manufacturer will invest his money in their production without the protection which a government patent affords; this is not a theory; it is a fact.

The few "useful inventions" which have been "presented to the profession" have proven to be useless, because no manufacturer undertook their production. Several years ago a furnace for porcelain crown and bridge work was introduced and presented to the profession. Those present at the meeting, where this generosity was manifested, passed unanimously a resolution of thanks. Thus the inventor received the "thanks" of two or three hundred men, and the profession have never since had an opportunity to buy one of those furnaces. Why? There being no patent, no one manufacturer cared to invest the capital needed to make and advertise the article, creating a demand, which at the end could be enjoyed by other manufacturers, who would invest only after the demand had been shown to be existent.

It is, therefore, a short-sighted policy and opposed to the welfare of the professional body, to cast ethical reflections upon the medical or dental inventor who takes a patent upon an article of manufacture, which, when produced, is offered to all alike at a uniform price. Whether or not the inventor receives remuneration in cash fee, or royalty, is a matter aside from the question, and of no concern to the body of practitioners.

**The Patent
on a
Process.**

But there is another class of patents, sometimes taken by dentists, but as often by men who merely seize the opportunity to prey upon professional men. These are at present legal, though unrighteous; and being unrighteous, they should as soon as possible be declared illegal.

It has been shown that both copyright and patent are legitimate when used in the protection of, and therefore in the encouragement of the manufacture of, a useful article. But when one man discovers, or imagines that he discovers a new method of procedure in practice, it should not be legal for him to exact tribute from all who use that method.

This may be considered from two aspects, the commercial and the ethical. From the commercial standpoint the ordinary inventor is permitted to exact and to receive a royalty, but in each instance he gives something tangible in exchange for the sum of money received; he furnishes a product of his own labor, or of labor hired with his own capital. He has money invested in his enterprise; he prepares and sells his patented article; there is a fixed price at which all may buy; and the patent protects him in the business which is founded upon his own ingenuity, and carried into effect with his own capital, it being immaterial to the argument that he may have associated with himself a capitalist in order to establish his business.

With a man who claims protection for a process it is different. He furnishes to the practitioner merely a set of directions. The thing produced, whether it be a crown, a bridge, a filling, a plate or any other dental appliance, is the product of the labor of the dentist. The dentist not only is expected to carry out the directions, the successful application of which depends upon his own skill, but it not infrequently will occur that unique peculiarities of a case, will require of him skillful modification of the patented method, in order to properly serve his patient. It might even be that such modification is so extreme that in the specified case a really new method has been devised. Nevertheless, under the present laws it is legal for the holder of a patent upon a process, to exact a license, or a royalty, the latter being manifestly unjust in such a case as has been cited.

From the ethical standpoint we see, with but little analysis, that when

dead scientists have freely bestowed the results of life-long study, thus furnishing the ladder upon which the living discoverer mounts to that point from which he "discovers" (?) his process, it is manifestly unjust that this one man, by governmental connivance, should be permitted to reap the entire reward. An example often points an argument, and a good one is at hand. There is in existence a patent, upon a process of producing anaesthesia. The discoverers of anaesthesia gave their secret to the world in the interest of suffering humanity. Had they not revealed the secret that such a thing as anaesthesia exists, how could this latter day scientist have "discovered" the best process of producing anaesthesia? How could he have invented a means of accomplishing that of which he had no knowledge?

The present law allows the patentee of a process to exact a license from all who practice the method; this also permits him to prevent all others from using the method. Is this just? Let us see.

The government sets up a standard which must be reached by all who wish to practice medicine or dentistry. To attain this the applicant must give several years of his life to study. Having done so, he is granted a license to practice. To practice what? The license should permit him to use the best known methods of cure in treating disease. Then why should the government give another individual the power to say to all practitioners; "I own the best method of treating that disease; if you wish to use it, pay me a license." This is not only a hardship against the men who have been required by the government to pay so dear a price for the license to practice, but in effect it is a fraud upon the community. The public having faith in the government, goes to a licensed practitioner, expecting the latest and best treatment; and he fails to receive it because of the misguided interference of the government, in granting to one man the monopoly of a method of cure.

**The Final
Remedy for
this Evil.**

The Dental Protective Association has done a holy work in fighting patents, which have been irksome to the dentists, and therefore burdensome to the people at large. But there never should have been any need for such co-operation of dentists, nor for the expenditure of the money which it has required. The profession should now unite in a request to Congress for the passage of a law,

prohibiting the granting of any patent, upon any method or process of treating or curing human diseases or ailments. Is there precedent for such an act?

The patent laws of this country at present deny a patent for any contrivance aimed exclusively at the destruction of human life. In a medical sense this has special significance in that no patent can issue upon any method of preventing pregnancy, or of producing abortion. If the government already thus wisely restricts the patent from protecting those who *avowedly* aim their inventions or discoveries at the life of a human being, it is but a natural and proper sequence to refuse government protection to those who *covertly* aim at human life, by desiring the right to refuse the use of a cure known to them, except upon the payment of license or royalty.

In summing up these arguments let us admit the right of professional men to take copyright; let us encourage the brighter minds to invent instruments and appliances, and to cover them with patents; but let us ask our government to guard us in future from those human harpies who do not hesitate to prey upon the suffering of their fellows; who are willing to sit in idle luxury which they purchase with the tribute extorted from the pangs of human pain.



The Editor's Corner.

We have in this country two so-called national bodies, the Southern Dental Association and the American Dental Association.

For a number of years there has been talk of permanent union between these two which has finally resulted in an agreement that both associations should meet at Old Point Comfort this year and "discuss" the feasibility of the scheme. There are a few who are sanguine in their belief that amalgamation will be effected at that time. There are many, including the president of the American, who, though believing it desirable, doubt the possibility of permanent union; while unquestionably if a vote were taken now there would be a great number unalterably opposed.

The existence of two national associations means practically the existence of no national association. This admits of no dispute. We have several local societies, tributary to one State society, but none would think of having two or more State societies. In similar fashion there should be but one supreme body in this country to which all others, sectional, State, district and local should be tributary. A plan for such a body is suggested herewith.

The National Dental Association.

The chief obstacle in the way of amalgamation between the present associations is the seeming necessity for merging the one into the other. In such an event only one name could be retained, and for this reason, though the suggestion of union emanated with the Southern, union would be prevented by the votes of the members of the Southern. Though they would admit by way of argument that the name "American Dental Association" would be the more fitting, if that name were adopted they would argue, with some force, though the force might have naught but sentiment as a source of energy.



that such amalgamation would mean nothing but the discontinuance of the Southern.

However, there is no real need for the passing away of either association, and in the scheme here offered the Southerners, who are the more sentimental, could the more fittingly retain their name as well as the individuality of their organization. Suppose that the supreme body be known as "The National Dental Association." Subsidiary to this we might have four great bodies. The Northern Dental Association (the present American), the Southern Dental Association, the Central Dental Association and the Western Dental Association. To each of these in turn a specified number of States should be assigned as delegate members, through the State societies, the latter in turn including the district societies.

This brief outline is all that should be adopted at Old Point Comfort. Then, having agreed upon union, without loss of individuality, a competent committee could be appointed to formulate the final articles of co-operation. While believing that no further details of the above plan should be discussed before union is agreed upon, it may not be amiss to suggest that with a distinctively national association, the present National Board of Faculties, National Board of State Examiners and the Technic Association should all cease to exist as separate bodies, and be merged together in the National Dental Association as the Educational Section.

**Should
Dentists Enter
the Army?**

The proposition comes from the Ohio State Dental Society to request our government to regularly employ dentists in the army, and Dr. Otto Arnold ably presents the case. All governments are supposed to maintain a paternal interest in its armed defenders. It is in consequence of this idea that pensions are paid to those who suffer in their country's cause. At the present time we are paying out millions of dollars in pensions every year, in aid of those who fought for the flag, but while in no way antagonizing the payment of pensions, the thought intrudes that it is an odd spectacle to find two great contending armies disbanded at the end of a heartless war, the defeated men returning home to support themselves, while the conquerors exact remuneration from the country which they have saved (?) for half a century thereafter. It would certainly seem a better expenditure of government funds to properly care for the bodies of the men actually in service, than to spend so much on those who fought for us so many years ago. The Ohio society is enlisted in a good cause and should have prompt co-operation of other State societies.

**An
Interesting
Old Letter.**

It would seem that the following letter, the original of which is in the possession of Dr. Hasbrouck, should be worthy of a place in the records of dental literature, as being an account of the first use of anaesthesia, by one who performed the operation. Hence its publication:

HARTFORD, Sept. 17, 1872.

DRS. HASBROUCK & HOWLAND,
956 Broadway, New York.

GENTLEMEN: Yours of yesterday is received, and I reply, confining myself to a few facts as they occurred, illustrating the discovery of anaesthesia.

On the 10th of December, 1844, there appeared in the *Daily Times* newspaper, of this city, a notice headed as follows:

"Advertisement. Laughing Gas." An exact copy of said advertisement published in an issue of the same paper in 1870, Feb. 17, in an article headed "Anaesthesia in Surgery. Who Discovered it?" I herewith transmit to you. It speaks for itself. At that exhibition, Dr. Horace Wells was present, and then and there conceived the idea, *from an accident*, that the gas could be used to extract teeth without pain.

Dr. Colton's object was to make money and nothing else—(see advertisement).

He knew nothing of our conference that night and determination to try the gas on Wells the next morning. Wells went to the hall and asked Colton to let him have a bag of gas, as he wanted to take it and have a tooth pulled—and he invited the party, Colton, Cooley and two others to come up and witness the operation. I was attending to a patient, but was awaiting Wells's return. When I entered Wells's office the same parties were there. Wells took his seat in the operating chair. I examined the tooth so as to be ready to operate without delay. Wells took the bag in his lap—held the tube to his mouth and inhaled till insensibility relaxed the muscles of his arms—his hands fell on his breast—his head dropped on the head-rest and I instantly passed the forceps into the mouth onto the tooth and extracted it.

Dr. Colton, Cooley and the two others stood by the open door ready to run out if Wells jumped up from the chair and made any hostile demonstrations. You may ask—Why did he not get up? Simply because he could not. Our agreement the night previous was to push the administration to a point hitherto unknown.

We knew not whether death or success confronted us. It was a *terra incognita* we were bound to explore—the result is known to the world. No one but Wells and myself *knew* to what point the inhalation was to be carried—the result was painfully problematical to us—but the great law of Nature hitherto unknown was kind to us and a grand discovery was born into the world.

Now, gentlemen, do not understand me as claiming *joint-discovery* with Dr. Wells. The great idea or inspiration was his—that we elaborated it together is honor enough for me.

I have no feeling in this matter except in the interest of truth, right and justice. For the credit of Dr. Colton I can say he made the gas, gave a bag of it to Dr. Wells to experiment with, witnessed the operation of extracting the first tooth and went on his way to other cities with his *grand exhibition* and "eight strong men to make them laugh more than they have for the six months previous." Very truly yours,

JOHN M. RIGGS.

**A Merry
Little Mountain
Maid.**

The following interesting contribution to our literature is forwarded and vouched for by Dr. J. E. Robinson, of Columbus, Ohio:

"As she unwound a bed-quilt from her head she exposed a much swoolen face and a dejected countenance and gave vent to her pent-up feelings in the following choice language:

"I'd ruther go to a butcher shop any day than a dentist, cause they don't care how much they hurt you. I'm nearly dead with neuralgy and I want this jaw tooth jerked, but don't you touch it, cause it's sore. I want you to give me natural gas, or vegetable air or some thing so long's I don't feel it, cause I'm nervous. The hull is good but the in'ards is rotten, an' I know 'twill break all to pieces. There's a double tooth on tother side that's all rotten on the back side, and I guess it makes my breath stink, specially when it swells up and busts. I've been threatenin' for a long time to have all my teeth jerked and some china ones in, what don't ache, an' I say, Dock, I s'pose you don't charge for temp'rance set? I got to have something to chaw with while my jaw's getting into shape, you know, and say, I don't want teeth like my sister. The slobber gets under hern, and then they don't stick."

Her husband during this speech had been leaning against the door and now apologized for not coming in, saying that he was "just comin' to town with a load of manure when the old woman's tooth began to jump, so I just fetched her along without stoppin' to change wagons or take off my overhalls, nor nothin'."

**Opening
Pyrozone
Cubes.**

The following letter from the manufacturers of pyrozone is of interest. It may also be added that at the present time the tubes bear a date upon each label, after which the contents would not be used.

This is an unusual safeguard of purity, and an expensive one on the part of the manufacturer, involving the return from the retail druggists of all unsold tubes.

In a recent issue of your magazine we notice a clipping from another journal in which is given a method for opening tubes of pyrozone by

placing the tube in a large bottle and shaking till the tube is broken and then pouring off the solution from the broken glass.

We would like to point out that this process is by no means free from danger, seeing that the violent agitation necessary to break the tube is quite liable to cause decomposition of the pyrozone, possibly with explosive force. However, the process will in any case cause considerable loss of the pyrozone, owing to the readiness with which oxygen is liberated when the liquid comes in contact with a rough surface.

The tubes can easily be opened by snipping off the top of the tube with a pair of concave-beaked forceps. Owing to improvements in the process of manufacture this is unattended with the slightest risk.

Yours very truly,

McKESSON & ROBBINS.

Negative Evidence

Again.

In a recent issue attention was called to the fact that members of our profession are prone to make deductions from negative evidence, which should not be accorded that value which is too frequently allowed. In this issue is a clipping from a most interesting paper from the pen of Dr. Arrington, in which the writer argues that pyorrhoea alveolaris is not infectious, resting his claim upon two cases which he reports, in which the most disgusting habits of several closely associated individuals did not result in transmission. This seems a most striking illustration of the misuse of negative evidence. Let us analyze. The doctor reports two extraordinary instances, in which the disease apparently should have been, yet was not, transmitted. From this he deduces that the disease is non-infectious. This is a good example of negative evidence, and the deduction is a false one. The true deduction would seem to be that, if the disease is infectious, certain individuals may be immune to it, even when in daily and hourly contact with it. All that the two cases cited can prove, is that it is possible to live in close proximity with, and yet not acquire this disease. A thousand such cases would only prove that such immunity is possessed by many individuals, whereas a single instance in which infection is traced indisputably from one individual to another, at once establishes the infectious nature of the disease, and establishes it so firmly as a scientific fact, that a million instances of contact without infection would not surmount this single case of positive evidence. And the positive evidence is not lacking. The much revered Dr. Wm. H. Atkinson inoculated a cat with the pus from a pyorrhoea pocket, and the little animal promptly contracted the disease, as was proven not alone by clinical observation, but by microscopic examination of sections of the diseased tissues.



Cataphoretic Extirpation of Living Pulp.

By VINCENT M. MUNIER, D.D.S., New York.

When I make the statement that the most sensitive patients will allow you to perform any operation on their teeth you may deem necessary by using cataphoresis, I speak from practical experience, as the following incidents of office practice will show.

Mr. Y. presented himself at my office for treatment, and upon examination of his mouth, I found several badly decayed teeth. Taking the right upper first bicuspid, which was extremely sensitive, I applied the rubber dam, and made ready the volt-selector. For the negative pole, or electrode, I used the sponge dipped in warm water containing 20 per cent. salt. The positive pole, or electrode, was a platinum pin bent into suitable shape, and laid on a pellet of cotton saturated with a 20 per cent aqueous solution of cocaine containing one or two drops of Calvert's carbolic acid, which has proven very satisfactory, as it preserves the solution for weeks, yea, for months, if in a brown bottle and tightly corked.

**Cocaine
which does not
Deteriorate.**

As my patient was very nervous, it required thirty-five minutes to reach ten volts. Holding it there for twenty minutes, I was able to extract the living pulp without pain to the patient.

Another patient was a young woman about twenty-two years of age, with the pulp in the right lower twelfth year molar aching, the cavity being in the anterior approximal surface. After preparing in the usual way, I was twenty minutes in reaching eight volts. After fifteen minutes I was able to extract all but a small portion of the pulp from the anterior canals. I renewed the application, and in twelve minutes was able to remove the remainder of pulp.

Those of us who have been using cataphoresis seem to get the same results, but with varying amounts of electricity. I have never been able to reach fifteen volts, my average having been five and one-half volts, but

as I obtain satisfactory results, I am led to believe that some dentists are pushing the voltage too far.

In my experience cataphoresis has proven successful in every case. The time required is longer, but I charge more, and the patients seem to be willing to pay more. So, both are benefited. The patient has the work done without pain, and the dentist receives a larger fee.

Difficult Partial Impressions.

By HOMER HEBERLING, D.D.S., Lehighton, Penn.

Several weeks ago a lady presented, desiring a partial upper denture. An examination of the oral cavity revealed a V-shaped arch with several sound teeth, posteriorly and anteriorly.

Wherever possible, I prefer taking plaster impressions in partial cases; therefore, I proceeded in the usual manner to get a plaster impression. The teeth were at unfavorable angles, seriously interfering with the work. After several unsuccessful attempts and spending considerable time in trying to patch together broken pieces which were more intricate than a Chinese puzzle, I hit upon the following method:

That portion of the plaster which came out intact, viz.: the palatal surface, festooning teeth lingually, and partially covering the ridge where teeth were absent, I replaced carefully in the impression-tray, flowing *very* soft plaster where the first impression had been imperfect. I next pressed the tray and plaster quickly into the arch, retaining it in position until the new plaster had set in. The cup was then easily removed, the new plaster fractured cleanly and in large pieces, some, however, remaining cemented to the original impression, making it a simple task to reunite the whole. The result was a perfect model of all the teeth, ridge palatal surface and condyles, from which I made a well-fitting plate.

Odontocèle.

By G. LENOX CURTIS, M.D., New York.

Under the head of "Incidents of Office Practice," I will report an operation for a patient whose superior temporary right lateral and cuspid teeth had been extracted when a boy and had not been replaced by permanent teeth. He stated that "the lateral incisor was no more than a peg

of a tooth." I am, therefore, inclined to believe that it belonged to the permanent set, as I found the left lateral unusually small and peg-shaped. In the place of the lateral and cuspid he wore a wide cuspid attached to a bridge. When a boy the incisor teeth began to separate and his dentist endeavored to draw them together, but ultimately failed. Later on, in consequence of the space, the artificial tooth was inserted and crowded against the central irregularly, forcing it over against its fellow.

For a long time he had observed a tumor forming under the gum near the apex of this tooth, and recently applied to Dr. Schmidt, who found the tooth devitalized, except at the very apex. Opening into the tumor he found it cystic and realized it was not an alveolar abscess, which it so closely resembled.

Examination revealed the cause of the trouble to be the missing cuspid, which I removed together with the tumor. I believe it to be essential to the ultimate healing of these wounds that the sac be dissected away, or so treated that it is thrown off. I speak of this case to illustrate how easily cystic tumors may be mistaken for alveolar abscess. Dr. Schmidt's knowledge of medicine enabled him at once to determine the difference.

Persistent Abscess After Extraction.

By DR. BROCKWAY, Brooklyn, N. Y

I had a case recently which was rather unusual. The patient was about 20 years of age—a young lady—who for several years has had a loose left upper second bicuspid; not at all painful, but simply loose, and it has, for the past few years, seemed to be growing looser without any apparent cause. The pulp was alive. About six months ago I noticed that this tooth was so extremely loose that it seemed to be hopeless. There was much absorption of the socket, beyond all chance of restoration, and I extracted it. I supposed that the discharge of pus, which had been slight, would cease. A few days ago I saw her again and there was still some discharge of pus. Upon probing I struck what was evidently enamel. Taking a hoe excavator I drew down the grinding surface of a temporary second molar, which had evidently been retained in some unaccountable manner, and the bicuspid had erupted apparently immediately over it. There was very little of the crown of the molar left—perhaps one-eighth of the grinding surface. I never met such a thing before, and it explained to me what had theretofore been a mystery.

An Empty Pulp Canal.

By DR. HYATT, Brooklyn, N. Y.

I came across a case last summer which was new to me. I was cutting down a bicuspid tooth to crown it. There was a cavity—not a large one—on one side, and in removing the decay I found an exposure of the pulp. I treated it, capping it with asbestos paper and inserting cement filling probationally. The patient then left town, returning in a week, when I proceeded to complete my operation. In grinding the tooth I removed the cement filling and the asbestos, but to my amazement I found the pulp chamber empty wholly to the end of the root. When I first exposed that pulp, it bled freely, yet within a week's time there was nothing there; the canal was perfectly dry. The patient, who was an old friend of mine, said that probably it was like some dead trees, which we have all seen, on one end of which there is a little green twig. In this case the pulp was probably dead before I commenced operating on it, and perhaps just the corner which I touched had a bit of life.

An Encysted Temporary Tooth.

By G. LENOX CURTIS, M.D., New York.

A lady was once referred to me by Dr. Marrick, who had cared for her teeth until the bicuspid had erupted, when she moved to a western city, and at the age of thirteen her dentist there noticed a fistula near the lower left first bicuspid. For more than a year he tried in vain to indicate the cause of pus, and thinking possibly the pulp in the second bicuspid might be dead, he extracted it, only to discover his mistake. The patient returned to Dr. Marrick in September, 1891, who discovered the disease deeply seated in the bone. In January of the following year I saw the patient. Passing a probe down along the fistula, I discovered beyond the mental foramen an opening in the substance of the jaw about the size of a cherry. Here I readily detected the enamel of a tooth and operated, removing a perfectly formed first molar of the temporary set. One root was nearly absorbed, and in the masticating surface there was a large cavity, most of the enamel being covered with salivary calculus. The wound healed rapidly and perfectly. Two years later I had a report from the patient that no untoward symptoms had presented subsequently.

Galvanic Action in the Mouth.

BY G. W. GARRISON, Kasson, Minn

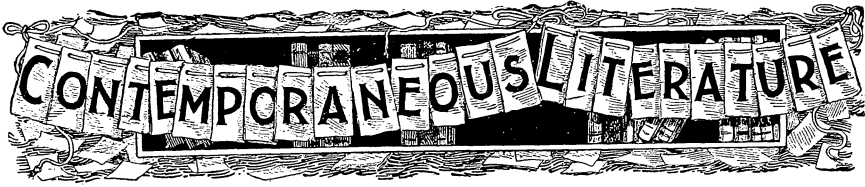
I have often heard of galvanic action of metals in the mouth, but the most complete battery I ever heard of, I produced in my own mouth. It may be of interest to others to have a history of the case.

My first molar was a wreck, so I took an aluminum crown, cut top off, and slipped the band to place—packed asbestos in bottom of cavity and then contoured it up nicely with alloy. The tooth looked well and the articulation which I sought was perfect. The adjacent bicuspid were gold crowned, as well as the first molar and second bicuspid below.

I thought it a success until I came to close my mouth, and then I found that I had a perfect galvanic battery. All was well when my mouth was open or when firmly closed—but when the teeth were nearly closed I received the shock. I endured it for an hour or two and then I slipped the band off and all was well again, except that the second bicuspid crown had changed in color to perfect aluminum, and was with difficulty restored.

The aluminum was the exciting cause, but the query is, would the effect have been the same had I left out the alloy and used the aluminum crown in the usual way?





Pyorrhœa not Infectious.

By DR. B. F. ARRINGTON, Goldsboro, N. C.

I have been very definitely convinced of one fact in relation to pyorrhœa. It is not contagious or transmissible from one person to another. I have watched carefully for results for more than a quarter of a century, and I am now thoroughly convinced that there is no such thing as transmitting from parent to child, or from any person to another under any circumstances. I have known several families residing in the country, embracing each parent and five or six children, where one or both parents were subject to the disease, well defined, and all would use one co-partnership toothbrush (a disgusting practice) until worn out, then another and so on, as needed, and not a child after a lapse of ten or fifteen years ever evinced the slightest feature of the disease. In one case in point, the husband, very loving and affectionate, fond of kissing his wife and children, was subject to the disease for more than thirty years (a typical case), losing by waste of process tooth after tooth, until but few remained in his mouth, and never did wife nor any of the children show signs of the disease. He (the husband) enjoyed good health, and he assured me more than once, he never suffered a moment from indigestion and experienced no particular discomfort from the disease.

I will mention one more case which I watched carefully for results for eighteen years, anticipating evil results from a censurable practice, but was disappointed. Mrs. — died, leaving a boy child about six or eight months old, who was taken charge of and cared for by its grandfather and an old aunt, both subjects of pyorrhœa well advanced, many teeth very loose, gums inflamed and swollen and blood and pus discharging freely under slightest pressure. The child was the pet of the family, and was tenderly cared for, first one then the other, grandfather and aunt feeding it, and for months the process of feeding was as follows: One or the other would chew and pulp the food in the mouth then put it in the mouth of the child; so the food was prepared and administered until the child was able to masticate for itself. I advised against such a course and informed them of the chances and very great probability (as I then thought,

do not now) of transmitting the disease to the child, but they heeded not. The child survived and grew up to manhood's years and stature, a splendid specimen of fine physique and blessed with as healthy gums and sound teeth as could be desired. Should the young man be troubled with pyorrhoea (quite possible) after this, would any contend that the disease was transmitted through food pulped and administered by grandfather and aunt? I could state other cases almost as extreme and quite as convincing to unbiased minds that the disease is not transferable by any process of contact or through any channel of conveyance of disease.—*Southern Dental Journal*.

Medical Topics in Fiction.

By J. W. COURTNEY, M.D.

A few days ago, while reading a new novel by John Strange Winter, I was much very impressed by a remark made by the married heroine to her husband in reference to her somatic condition—she was pregnant at the time—and I could not help reflecting on the curious medical aspect of life in fiction. For instance, what a charmed existence the married heroine usually leads! Gifted with a *libido*—if we are to infer anything from the passionate love scenes which take place previous to the marriage—which is only surpassed by the horrible examples in the pages of Krafft-Ebing, she goes merrily along in her butterfly, society life with never, or seldom, an accident in the way of pregnancy to interrupt her pleasure.

The Never-Pregnant Heroine.

Her sterility is a thing to marvel at. She may even not be satisfied with her own husband, but her liaisons with other men are just as fruitless. Should the author by any mischance get her pregnant, she usually does not suspect it until very near full term; then it comes upon her like a shock and she communicates her suspicions with much coy hesitancy and in a few well-chosen words to her astonished—no, not astonished, that is too mild, to her astounded—husband. Such a thing has never entered his head for a moment. When her time has come, the good and skillful old family physician is summoned to my lady's chamber, and in less time than it takes to tell, an heir has come to the vast estates of Slippery-Elmhurst.

The prognostic and therapeutic powers of the unmarried heroine are something to make the keen and experienced specialist shed bitter tears

of envy. Her betrothed lover, Count Kickhisownwhiskersoff, is carried almost lifeless from the hunting field where his spirited steed has thrown him back downward across a fence. The eminent neurologist, Dr. Neuron, is called in consultation, and after a careful and detailed examination pronounces it—fiction M. D.'s always pronounce—a case of fractured spine, and says there is no hope. The poor paraplegic Count goes on from bad to worse under the most skillful hands that money can procure, and *we* can see for him only the usual dismal picture of sphincteric disturbance, bed-sores, cystitis and the rest. Just before the time when *we* usually get ready to fill out the necessary paper for the undertaker, the heroine takes a hand in the game. Her beautiful, spirituelle face is deadly pale, but there is a gleam of quiet determination in her tear-dimmed eyes. From the side pocket of her elegantly-fitting gown, which clings in soft folds to her tall, *svelte* figure, there peeps forth the upper border of a little red-bound volume with a maltese cross in the right hand corner. "Do not give up hope, dearest," she says in a tone of quiet assurance, "my heart tells me that under the tender care of your adoring Coccygodynia you will live."

**The
Heroine as
a Nurse.**

The sorrowing relatives silently retire, for now they know that the Count is saved. The next day on making his visit, the doctor is surprised at the marvellous change for the better in his patient, and looks in wonder at the calm, beautiful face of this mere slip of a girl, who has installed herself as sole nurse in this most difficult case. How she manages with catheter and bed pan are totally unimportant and insignificant details—to the author.

At the end of a few weeks in such cases—or even less, according to the skill of the individual heroine—the patient is restored to his usual vigorous health, and the virgin heroine joins that wonderfully numerous band of sterile married heroines above mentioned.

The mere simplicity of the therapeutic measures by which these gifted young women bring about such marvellous results is truly astounding. By their sunny smiles alone children with far-advanced tuberculous joints are restored to blooming health and new joints. Nothing seems to be able to resist them, from advanced phthisis to an impacted gall-stone.

A course of six lectures on "First Insults to the Injured" makes them as skillful as the most practiced surgeon in real life. Ever and anon some sorrowing, but grateful mother of the slums is heard to remark that were it not for the coolness and presence of mind of that angel—one of the above young ladies—in giving Mikey a dose of castor oil when he sucked the ends off the sulphur matches, the dear child would never have had such a speedy and happy death.

**Extraordinary
Children
of Fiction.**

With the comparatively few births and the large number of deaths which occur annually in fiction, it seems as if the juvenile population must soon be wiped out completely. The life of the child of fiction seems to hang usually by the merest thread. He may look healthy and seem vigorous, but it is merely apparent. Let the society-loving mother neglect such a child for a single evening and its goose is cooked. Some go off the hooks from simple failure to receive the usual good-night kiss. The demise of others is attributed to the careless habit of their otherwise well-meaning fathers of acquiring a jag at the club. A mere cross word spoken in the heat of passion frequently brings about a fatal issue.

When one takes into consideration the extremely delicate health of the ordinary children of fiction, and how comparatively small their numbers, it seems strange that their parents can go on killing them off in the grossly careless fashion in which they do. If by any chance, however, the fiction child be vigorous, he is vigorous with a vengeance; his vitality serves the medical reader as an endless source of wonderment. Electric cars may break his legs and fracture his skull, he may fall from dizzy heights, burn almost to a crisp or be buried under any number of tons of coal; he may even be given up by his ordinary medical attendant, but there is always lurking somewhere in the realms of fiction a skilled surgeon, to whom such cases are the merest child's play. Truly the advance in fiction surgery in the last few years has been something incredible.—*Boston Med. and Surg. Journal.*

The Destiny of the Third Molar.

By D. L. HERTIG, D.D.S.

I have never heard any satisfactory explanation as to why the wisdom teeth put in their appearance from ten to twelve years after an abundant supply of the organs of mastication has already been provided.

Not a dentist in the land will disagree with me when I say that 28 teeth are enough for any man, be he Zulu or professor; that is, if the aforesaid 28 can be kept in good condition, which in a great many cases is impossible.

Here is where the utility of the third molar manifests itself; here is where its late arrival shows as much forethought on the part of the Supreme Designer as does the early advent of the six year molar. Not because the lapse of ten or twelve years allows the jaws to develop so as to receive it. No!

Had he willed it so, the Ordainer of all could have caused the same development to have taken place in the youth of 14, for the reception of the third as did take place in the child for the reception of the first and second molars.

I think a different plan was intended.

I regard the third molars, coming as they do years after a full complement of teeth has been supplied, as auxiliaries, reinforcements in fact to the original set for the accidental loss of one or more of them. We see this illustrated time and again. We cannot fail to notice the important duty performed by these organs.

I have observed many cases where the timely arrival of the wisdom tooth has filled the space and supplied the loss of a valuable grinder. In this way it fulfills a more important mission than if it came merely as an addition to an unbroken arch.—*Ohio Dental Journal*.

Unnecessary Sacrifice of Dental Pulp.

By DR. W. A. SIDDALL.

There is nothing in dentistry which requires more skill and thought and good judgment than to properly place anchorage for a filling without danger to the pulp. To be able to tell where the pulp is in a tooth and to so place anchorage that the filling will not be injurious to the life of the pulp, requires the greatest judgment.

There are so many things to be considered—the age of the patient, the density of the tooth, any peculiar shape of the tooth or cavity. We must look out for any unusual location of the pulp or unusual length of the horns of the pulp.

I believe that there are a large number of pulps sacrificed unnecessarily by a lack of care and judgment in the preparation of cavities.

There is no question but that the use of hot air in connection with a certain medicament for sensitive dentine, a few years ago, resulted in the death of a great many pulps, and we should be careful to know what effect any new treatment for the same purpose may have on the pulp.

No doubt many pulps will be sacrificed by the use of cocaine and cataphoresis.

It is often a difficult thing to diagnose an exposed or nearly exposed pulp, and especially is this so when the dentine is insensible to pain. I would not underestimate the value of a method whereby the dentine can be desensitized, but would urge that unusual care be exercised in its use.

Whether cataphoresis will prove to be detrimental to the welfare of the pulp remains to be seen, but certainly unless great care is used many pulps will be destroyed by its use.—*Ohio Dental Journal*.



The American Text-Book of Prosthetic Dentistry in Contributions by Eminent Authorities.

Edited by CHARLES J. ESSIG, M.D., D.D.S.

Professor of Mechanical Dentistry and Metallurgy, Department of Dentistry, University of Pennsylvania, Philadelphia. Illustrated with Nine Hundred and Eighty Engravings. Philadelphia and New York: Lee Brothers & Co Publishers, 1896.

PART III.

**Chapters
Contributed by
Dr. H. H. Burchard.**

This young and able writer, who fills so well the position of teacher in pathology at the Philadelphia Dental College, has written the major portion of the book, and fairly shares with the editor the credit for the great amount of labor involved.

Dr. Burchard's first chapter treats of the "Preparation of the Mouth; Choice of Material and Type of Denture." The scientific preparation of the mouth is practically a new departure in a work on prosthetic dentistry, and is an evidence of the elevated plane to which *mechanical dentists* should aspire. Under "Morbid Conditions of the Gums" are described in brief the more common pathological conditions and the proper remedies for their alleviation. His remarks on "Retention or Extraction of Natural Teeth" are so succinct and valuable that no exception can be taken to a single utterance. The practitioner as well as the student is advised to read these two pages with care, as no better rules for practice have ever before appeared in print. Under "Surgical Complications" there is an omission of the necessity of removal of tumors and the cure of any alveolar abscesses. Under the heading "Choice of Base" especial attention is directed to the statement very correctly made that "gold is as much king in prosthetic as it is in operative dentistry."

Then is sounded a note of warning against abuses of the vacuum chamber, which should be heeded. The only valid criticism that can be made in reference to this particular chapter is that it is too condensed by half, and it is to be hoped that in a later edition, it will be enlarged and made as comprehensive as it deserves.

In chapter VI, "Taking Impressions of the Mouth," there is given a most careful and detailed description of the various methods and materials, employed in order to obtain a good working model—we quote with the author, the general rule that "just in the degree that an impression is difficult to take owing to irregularities of form or in the position of the teeth, it is imperative that it should be taken in plaster." The various forms of trays are carefully illustrated and described. When there is an uncontrollable irritation of the throat and a consequent tendency to gag on the part of the patient, the author recommends a spray of a 1 per cent. solution of cocaine. Simple spraying by means of compressed air will generally produce as good results as any other means. Various elaborate descriptions are given of different methods of taking partial impressions with converging teeth as well as the manner of taking impressions for palatal restoration and of fractured maxillae. The next chapter deals with "Making of Models and their Preparation." A very ingenuous geometrical device is illustrated for determining the proper position of the vacuum chamber.

We disagree with the author when he says that only in a limited number of cases are the best results obtainable without a vacuum chamber; no vacuum chamber is not only more in accordance with physiological conditions, but in nearly every case gives better results. Under the chapter on "Dies, Counterdies and Moulding" the writer very properly prefers good zinc to Babbit metal. We now come to the very interesting chapter, "On Suaged Metallic Plates," in which the superior claims of metallic over vulcanite and celluloid are well stated. The slight attention that is paid in this comprehensive chapter to the skeleton clasps of Bonwill is to be deprecated, as this form of work when properly constructed, meets all the objections urged by both Essig and Burchard against clasps.

While agreeing with Dr. Burchard when he says the clasps should not bear the greater burden of the support of the plate, we cannot assent to the wisdom of the practice which claims that "the support should be derived from uniform pressure upon the soft tissues." Following out this practice can only result in the gradual sinking of the plate with consequent disarrangement of the positions arranged for the clasps. The plate should receive its main support from angular pieces of metal either attached to the clasps or from some portion of the plate near the clasp. These angular rests, as described by Dr. Bonwill should be accurately fitted in chosen recesses in the occlusal surfaces of the clasped teeth where they will not interfere with a proper occlusion. When this is found impossible, it rests with the skill of the dentist to make a suitable impression on the grinding surface even if it is necessary to make a regular cavity and line its wall with a gold filling. There is no excuse for ever filing a

tooth in order to get space for a clasp. Other means can always be found. The advantages of suaging by shot are set forth, and also a short description of electro-deposit plates.

These chapters reach a climax in the next one entitled "Selecting and Fitting the Teeth; Attachment to the Plate; Finishing." The illustrations in this chapter are especially worth noticing. Plain teeth are strongly approved and the most careful attention advised to the carrying out of every little detail.

The two chapters written by Dr. Burchard on artificial crowns and bridge work take up over one hundred pages of the volume, and to many specialists in this line of work, will prove to be the most interesting portion of the book. They are profusely illustrated and attempt to describe all the latest designs and characteristics of both forms of work.

It is impossible to write such chapters without making more or less omissions of types and designs, as well as giving unjust credit to the wrong party in some cases. What is described as the new Richmond crown with its concavity fitting over the V-shaped portion of the root, has been in use for over ten years by many operators who adjust the ordinary Logan crown in this way. In like manner, what is described as the Mason crown with its admirably devised removable porcelain facing, is an old device of Dr. Wardwell and latterly introduced by Dr. Van Woert.

The author is deserving of great praise for introducing very much-needed, and it is to be hoped, heeded remarks on "Physiological and Pathological Relations."

His remarks on preparation of root, from a therapeutic standpoint, leave considerable unsaid, there being no mention made of the Schreyer combination of potassium and sodium, nor of Dr. Weld's chemico sensitized points. The different methods of mechanical preparation are well illustrated and described.

It is impossible in the limits of our review to treat exhaustingly of the very instructive chapter on bridge work. The author is abreast of the day in his decided leaning to removable bridge work in contradistinction to fixed and immovable bridge work.

(To be continued.)

The Standard Dictionary.

To grasp the idea of what this single volume contains needs but a recapitulation of what it tells of a particular art or occupation, and a little reasoning from analogy. The dentist will find under the word "den-

tal" an accurate picture, as well as a definition of the dental engine. He will also find definitions of the dental articulator, the dental plugger and the dental formula, the latter as follows: "A tabular statement or formula of the dentition of a mammal. It is often given for the teeth on one side of the mouth only; and incisor, canine, premolar, and molar are abbreviated i., c., p., and m. Thus the dental formula of the dog is i. 3-3, c. 1-1, 4-4, m. 2-3=21, or X 2=42, the upper (first) figures telling the number of teeth in half of the upper; the lower (second) in half of the lower jaw." The dentist does not need such rudimentary information himself, but it would be advantageous to him to have some of it disseminated among his patients. Of course the Standard Dictionary is no more

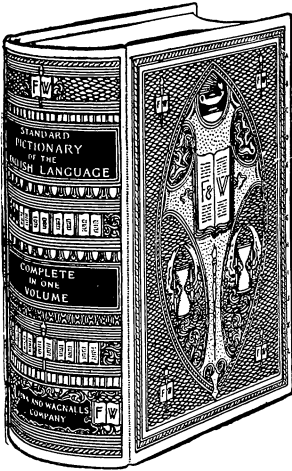
devoted to dentistry than to other matters of human interest. It is a great modern cyclopedia. Old definitions and descriptions have given way to new ones written not by mere bookmen, but by practical workers in the field of man's development to which their subjects belong.

The five thousand illustrations in this book cover natural history, mechanics, electrical appliances, sports of the day, mineralogy, metallurgy, floriculture, agriculture, Egyptology and a hundred and one other subjects. Small as each has to be, care has been taken to make everyone clear, intelligible to the average reader.

No work ever printed in America or elsewhere has made more accurate use of color. The solar spectrum, gems, birds, flowers, flags and decorative orders are represented perfectly.

Though it may be obtained in two volumes, the single volume form is to be recommended.

The reduction in price of the Standard Dictionary to \$12, or \$12.75 with patent thumb index, brings it well within the reach of professional men. Messrs. Ward & Gow, Union Square, N. Y., send the dictionary to any address in the United States, carriage prepaid, on receipt of price.



Correspondence.

Editor ITEMS OF INTEREST:

**A Sample Letter
of Advice.**

One almost suspects some trick when you ask how to run the ITEMS—how to run a hotel, as it were. Possibly you are agent for some statistician and want to see just how much advice you will get. Well, here's mine.

As you wish to "attract the greatest number of dentists in the world," and as there are "many men of many minds," I take it that your distinctive feature should be *variety*. All you have to do is to say, "The editor of this magazine is not responsible for the sentiments expressed by its contributors," and then let in the *variety*, so *menued* that "the busy dentist" and the idle one, the one who does not want to know anything more about dentistry and the one who only wants it as a toothsome salad, can be sure of finding something to his taste.

For first course, have the light and chatty. Here you may call upon your friends not scientific, and make them write whether they wish to or not. Whatever any one of your "400" might write would be of interest to the coterie, at least.

For main courses, have your solids; and for side dishes, let in appeals for the "down-trodden" of our profession, and protests at the uncharitableness of prosperous, pompous, pseudo-professionals towards dental mediocrity, which cannot afford the luxury of dental ethics—to "sit" in dignified silence and wait for the world to come to them." And for desserts give dishes of the rarest pabulum for the most intelligent.

All this need not add to your labors, but really lessen them, as, having to cater to every taste you are absolved from giving everything in conformity with your own. True, a more ideal journal might be more gratifying to you and the "400."

Besides, ideals be darned! In this scrambling world, where the almighty edict itself seems no more ideal than to say, to one class, "root pig or die," and to the other, "accumulate all you can."

Thus Dr. Jarvie would seem either knave or *naïve* when he asks "commercial men" to ignore prices in professional services, though thereby a bill may be rendered "\$7,000" instead of \$700.

Yet Dr. Jarvie is neither knave nor naïve, but simply one of the few magnificent professional enthusiasts with whom money considerations in connection with services are, indeed, obtrusions. And while such as he render good services and reasonable bills—very properly taking into account ability to pay—unfortunately for ideal business there are those

in all professions who are neither specially competent nor well bred, who yet think God has made them so superior to even their co-equals in patrons, that their services are worth ten times as much as said equals can command for theirs.

To repeat my text, if you would be the genius of success, let in the variety, from the transcendentalism of an Atkinson down to the plain "Herr Gottinimmelheiligkreuzbommbenundgranatenmillionendonnerwetter," discussing everything—except the sexual question; not only is woman lost by debate here, but civilization itself is.

Too wide a scope for dental literature, say you? Then intelligence is a supererogation with us, though only through it and modern evolution can man be enabled to exercise that greatest of all virtues, charity, which 1,800 years of Christian command alone have failed to enforce.

Now, Mr. Editor, hoping I have touched upon enough points to illustrate my subject, and closing with portends of success for the ITEMS, I am

Very truly yours,

Piqua, Ohio, Feb., 1897.

C. C. DILLS.

In Memoriam

The following resolutions were passed at a special meeting of the New Jersey State Dental Society, Friday, Feb. 5, 1897, at Newark:

Whereas, It has pleased Almighty God to remove suddenly from the midst of his active labors, our fellow-member and treasurer, Dr. George C. Brown;

Resolved, That this society hereby desires to place upon record their high appreciation of his manly Christian character and of his high professional standing, as well as his genial and pleasant presence;

Resolved, That we mourn his death as a personal, as well as professional loss, and hereby desire to testify to our high appreciation of the efforts which he always and at all times gave to the profession of his adoption, and his devoted activity to the advancement of its welfare;

Resolved, That we mourn with his afflicted family, and extend to them in this hour of trial our sympathies;

Resolved, That a copy of this resolution be sent to his family and be placed upon the minutes of our society, and be published in the journals devoted to dentistry.

Signed, C. S. STOCKTON,
F. C. BARLOW,
J. ALLEN OSMUN, Chairman.

Society Meetings, Elections, Etc.

Southern Dental Association.

COMMITTEE ON CATAPHORESIS.

The Cataphoresis Committee of the Southern Dental Association desires to present the subject to its fullest extent at the coming meeting, to be held at Old Point Comfort, and with that end in view does hereby invite any member of the profession who would like to clinic before the association, or has anything new in this line to communicate with me.

Manufacturers of appliances of any kind for use in this process are also invited to correspond with me, as our committee will have charge of the display of all apparatus pertaining to the subject and is desirous of presenting everything that is known upon the subject.

This communication is particularly addressed to each and every member of both the Southern and the American Associations, and it is hoped will obtain numerous replies.

Very respectfully,

C. EDMUND KELLS, Jr., Chairman,
Medical Bldg., New Orleans.

North Carolina State Dental Society.

The twenty-third annual meeting of the North Carolina State Dental Society will be held at Charlotte, N. C., May 12th, 13th and 14th, 1897. An interesting programme is being prepared, and a most cordial invitation is extended to all members of the profession in good standing, and especially do we invite those from contiguous States, Virginia, South Carolina, Georgia and Tennessee.

The State Board of Dental Examiners will meet at the same place on Tuesday, the 11th of May, for the examination of those desiring license to practice dentistry in this State.

G. W. BANNER, D.D.S., Secy.

Dental Society State of New York.

The twenty-ninth annual meeting of this society will be held in Albany, May 12th and 13th, at which time the following programme will be presented:

President's Annual Address, H. J. Burkhart, D.D.S.

Report of the Correspondent, R. Ottolengui, M.D.S.

Report of the Committee on Practice, A. R. Starr, D.D.S.

"Amalgam Fillings, with a Practical Demonstration," G. V. Black, M.D., D.D.S., Sc.D., Jacksonville, Ill.

"Dental Organizations," James Truman, M.D., D.D.S., Philadelphia.

"Irregularities of the Teeth and their Correction," J. N. Farrar, M.D., D.D.S., New York.

"Cataphoresis," H. W. Gillett, D.M.D., Newport, R. I.

Subject to be announced, B. Holly Smith, M.D., D.D.S., Baltimore.
Members of the profession are fraternally invited to attend.

C. S. BUTLER, D.D.S.,
Secy., Buffalo.

H. J. BURKHART, D.D.S.,
Pres., Batavia.

Southwestern Iowa Dental Society.

In response to invitations issued January 1st, 1897, to the dentists of Southwestern Iowa, there assembled a number of the profession at Creston, Iowa, January 15th, who formulated an organization to be known as the Southwestern Iowa Dental Society, electing President, Dr. H. H. Gantz, Hunnerton, Iowa; Vice-President, Dr. J. W. Monker, Red Oak, Iowa; Secretary, Dr. M. F. Stiver, Creston, Iowa; Assistant Secretary, Dr. J. A. Ross, Osceola, Iowa.

The first regular meeting to be held at Red Oak, Iowa, June 2, 3 and 4, 1897, at which time we expect to have one of the best meetings ever held in the State.

M. F. STIVER, Secy.

Dental Examiners of the State of Vermont.

The Dental Examiners of the State of Vermont hereby announce that they will hold their next annual meeting for the examination of candidates in dentistry at Montpelier, Vt., the third Wednesday of March next at 2 o'clock.

A. J. PARKER, Secy.
Bellows Falls, Vt.

Vermont State Dental Society.

The twenty-first annual meeting of the Vermont State Dental Society will be held at Pavilion Hotel, Montpelier, March 17-19, 1897.

The Executive Committee are arranging a very interesting programme and a good attendance is expected.

A cordial invitation is extended to all.

THOMAS MOUND, Recording Secy.

GRACE L. BOSWORTH, Corresponding Secy.

Eastern Illinois Dental Society.

The eleventh annual meeting of the Eastern Illinois Dental Society will be held on the third Tuesday and Wednesday of March 16 and 17, 1897, at Mattoon, Ill.

OFFICERS.

President, I. A. Lumpkin, Mattoon, Ill.; Vice-President, E. E. Kimel; Treasurer, S. A. Cambell, Mattoon, Ill.; Secretary, F. M. Conkey, Horner, Ill.

All resident dentists are invited.

Illinois State Board of Dental Examiners.

The Illinois State Board of Dental Examiners will meet Monday, March 29, 1897, at Chicago, for the purpose of examining candidates and transacting other business.

All persons intending to appear before the board at that time, should notify the secretary not later than March 15th.

L. L. DAVIS, Sec.

1303 Columbus Memorial Bldg.

Central Dental Association of Northern New Jersey.

At the annual meeting held the 15th of February, the following officers were elected for 1897-98:

President, William L. Fish, D.D.S., Newark; Vice-President, F. Edsall Riley, D.D.S., Newark; Treasurer, Charles A. Meeker, D.D.S., Newark; Secretary, Herbert S. Sutphen, D.D.S., Newark; Executive Committee, George E. Adams, D.D.S., South Orange; W. E. Treux, D.D.S., Freehold; C. S. Hardy, D.D.S., Summit; F. S. Gregory, D.D.S., Newark; Fred. C. Barlow, D.D.S., chairman, Jersey City.

H. S. SUTPHEN, Secy.